IBM Tivoli Netcool Performance Manager
Wireline Component
Document Revision R2E1

Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack Installation and User Guide

Note
Before using this information and the product it supports, read the information in "Notices" on page 83.

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Installing and Using Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack

Installing and Using Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack describes how to install and configure the various components such as:

- IBM InfoSphere Information Server
- IBM InfoSphere Information Client
- Apache ActiveMQ

Apart from these installations, this guide also talks about the following topics:

- Job related tasks
- The devices and technologies that operate in the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack environment.

Intended audience

The audiences are the network administration engineers at IBM customer sites who install, configure, and use the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack as part of their installation.

To install and use the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack, you must have a working knowledge of the following subjects:

- Tivoli Netcool Performance Manager DataMart
- Tivoli Netcool Performance Manager administration
- Internet Protocol networks
- Tivoli Netcool Performance Manager Wireline Technology Pack

The audiences must also be familiar with the specific technology that the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack deals with.

Tivoli Netcool Performance Manager - Wireline Component

IBM® Tivoli Netcool Performance Manager consists of a wireline component (formerly Netcool/Proviso) and a wireless component (formerly Tivoli® Netcool® Performance Manager for Wireless).

Tivoli Netcool Performance Manager - Wireline Component consists of the following subcomponents:

- DataMart is a set of management, configuration, and troubleshooting GUIs. The Tivoli Netcool Performance Manager System Administrator uses the GUIs to define policies and configuration, and to verify and troubleshoot operations.
- DataLoad provides flexible, distributed data collection and data import of SNMP and non-SNMP data to a centralized database.
- DataChannel aggregates the data collected through Tivoli Netcool Performance Manager DataLoad for use by the Tivoli Netcool Performance Manager DataView reporting functions. It also processes online calculations and detects real-time threshold violations.
- DataView is a reliable application server for on-demand, web-based network reports.

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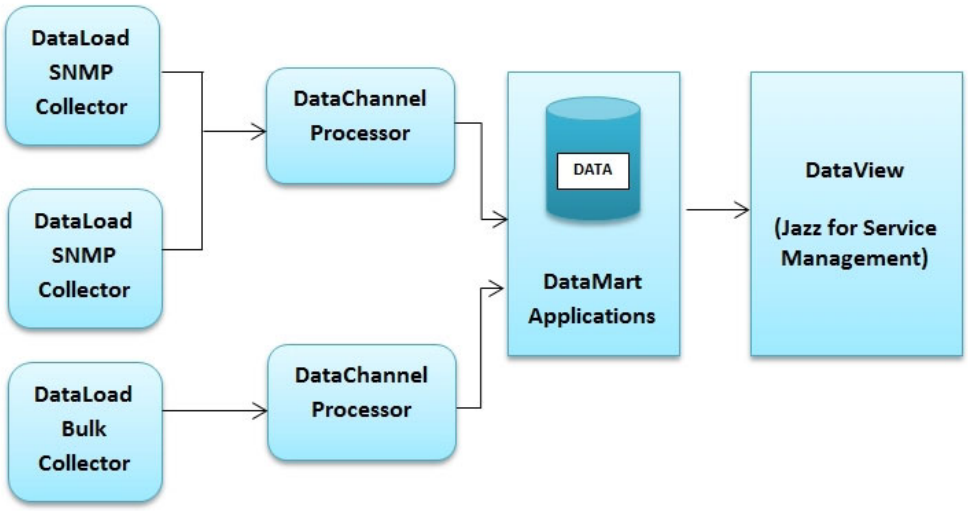
- Technology Packs extend the Tivoli Netcool Performance Manager system with service-ready reports for network operations, business development, and customer viewing.

The following figure shows the different Tivoli Netcool Performance Manager modules.



Tivoli Netcool Performance Manager documentation consists of the following:

- Release notes
- Configuration recommendations
- Installation and upgrade information
- User guides
- Technical notes
- Online help

The documentation is available for viewing and downloading on the information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/topic/com.ibm.tnpm.doc/welcome_tnpm.html.

Service Management Connect

Connect, learn, and share with Service Management professionals: product support technical experts who provide their perspectives and expertise.

Access Network and Service Assurance community at https://www.ibm.com/developerworks/servicemanagement/nsa/index.html. Use Service Management Connect in the following ways:

- Become involved with transparent development, an ongoing, open engagement between other users and IBM developers of Tivoli products. You can access early designs, sprint demonstrations, product roadmaps, and prerelease code.
- Connect one-on-one with the experts to collaborate and network about Tivoli and the Network and Service Assurance community.
- Read blogs to benefit from the expertise and experience of others.
- Use wikis and forums to collaborate with the broader user community.

Related information:

Tivoli Netcool Performance Manager Wiki on developerWorks

Tivoli technical training

For Tivoli technical training information, see the following Tivoli Netcool Performance Manager Training website at https://tnpmsupport.persistentsys.com/training.

Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

Online
Access the IBM Software Support site at http://www.ibm.com/software/support/probsub.html .

IBM Support Assistant
The IBM Support Assistant is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The Support Assistant provides quick access to support-related information and serviceability tools for problem determination. To install the Support Assistant software, go to http://www.ibm.com/software/support/isa.

Troubleshooting Guide
For more information about resolving problems, see the problem determination information for this product.

Conventions used in this publication

Several conventions are used in this publication for special terms, actions, commands, and paths that are dependent on your operating system.

Typeface conventions

This publication uses the following typeface conventions:

Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:**, and **Operating system considerations**:)
- Keywords and parameters in text

Italic

- Citations (examples: titles of publications, diskettes, and CDs)
- Words defined in text (example: a nonswitched line is called a *point-to-point line*)
- Emphasis of words and letters (words as words example: "Use the word *that* to introduce a restrictive clause."; letters as letters example: "The LUN address must start with the letter *L*.")
- New terms in text (except in a definition list): a *view* is a frame in a workspace that contains data.

- Variables and values you must provide: ... where *myname* represents....

Monospace

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

Bold monospace

- Command names, and names of macros and utilities that you can type as commands
- Environment variable names in text
- Keywords
- Parameter names in text: API structure parameters, command parameters and arguments, and configuration parameters
- Process names
- Registry variable names in text
- Script names

Chapter 1. Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack overview

The LogToFile feature is added to the SAM server to allow downstream systems to retrieve metric data as it arrives and without any filtering. The data is fed to the downstream systems in a streaming fashion. The downstream system must do the filtering with caution and as necessary.

In the earlier releases of Alcatel-Lucent 5620 SAM Technology Pack, FindToFile is used to obtain the metric data from SAM Server for any time period you want. Though this feature is convenient, FindToFile feature adds extra computational burden to the SAM Server. The new LogToFile feature relieves the SAM server of the burden of querying and filtering for the subset of data that the downstream system needs.

UBA structure

An array of UBAs is divided into UBAs for accounting and performance. There can be multiple UBAs. However, the UBAs must be in a set of accounting and performance. These UBAs processes the inventory and metric data that is presented to them by IBM InfoSphere Information Server DataStage.

The metrics (XML files) and inventory (XML files/JMS messages) from the SAM server are parsed by DataStage and converted to CSV files for the UBAs. DataStage produces one file per UBA per period.

The record types in the incoming CSV files are heterogeneous. The inventory data is added to the CSV file only under the following conditions:

- When there is a full dump.
- When a JMS inventory message is received.

Dynamic models

In the previous versions of Alcatel-Lucent 5620 SAM Technology Pack, the SAMIF and BLB communicate directly with SAM server. SAMIF acquires and processes inventory via bulk transfer (full dump) and JMS messages (changes). BLB issues periodic SOAP FindToFile requests for metric data and acquires that data over SFTP and makes it available to the UBAs. SAMIF communicated via JMS, SOAP, and SFTP to acquire and process inventory. The BLB communicated via SOAP and SFTP to export and acquire bulk metric data files. One UBA processes performance metrics and another UBA processes accounting metrics. This design does not accommodate more than two UBAs. In the current design SAMIF and BLB are removed and IBM InfoSphere DataStage is used to interface with the SAM server by using JMS, SOAP and SFTP. You can have an array of UBAs that are subdivided into UBAs for accounting metrics and UBAs for polled metrics.

Currently, in Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack, DataStage interfaces with the SAM server and provides metric and inventory data to the UBAs. Rather than having a separate component to process inventory for the entire system, inventory is processed inline by the UBAs. DataStage performs the following functions:

- Acquires and processes inventory and metrics from SAM in XML format.

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- Filters the inventory and metric data. This function was previously handled by SAM server.
- Partitions data by UBA-based partition key. This information is taken from Proviso DB.
- Waits for complete data for a window period.
- Merges metrics and inventory into one CSV file per period per UBA.

Data collection model

The performance data and accounting data metrics are for the network infrastructure and services that the Alcatel-Lucent 5620 SAM LogToFile Technology Pack manages.

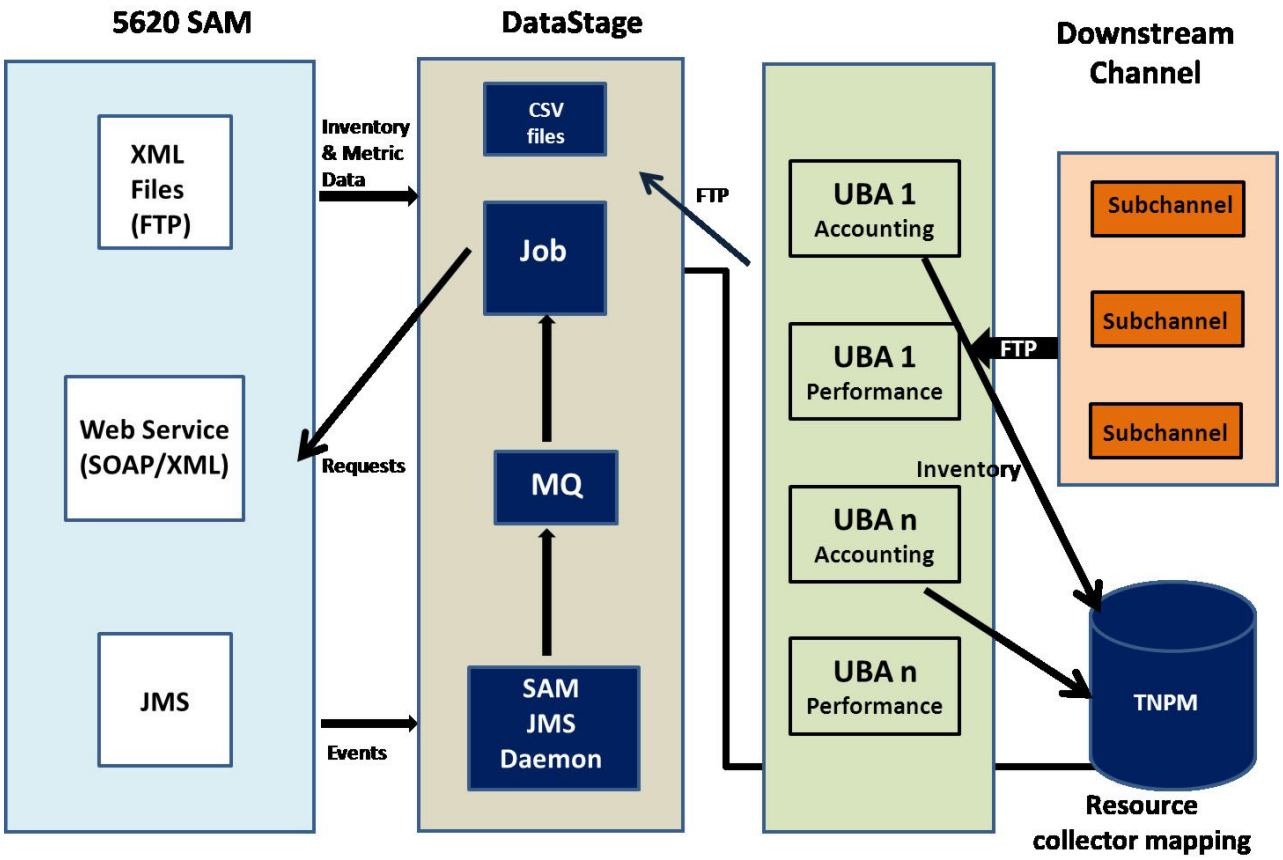

Figure 1. Data collection model for the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack

DataStage parses the SOAP/XML files and JMS messages from the SAM server and transfers the data to the UBAs as CSV files. DataStage produces one file per UBA per period. These XML files contain records of inventory and metric data. The inventory and metrics data are in the CSV format, with an initial integer identifier that specifies a record type, and the subsequent fields contain the actual data of the record.

The incoming CSV files are processed by a single input schema in the UBA. The record types in the incoming CSV files are heterogeneous. For more information about the file formats, see "Bulk input file formats" on page 7.

The UBAs handle processing of both inventory and metric data. Any number of UBAs can be configured to handle this process with each UBA designated either as accounting UBA or performance UBA. The number of UBAs are best scaled up to load.

These XML files are then collected and processed, with the results presented in a set of web-based reports. These reports are listed and described in *Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack Reference*.

Inventory

The Alcatel-Lucent 5620 SAM contains an object database that represents the network resources and their relationships to other network resources. It also represents some abstract resources and relationships. Services and their subscribers are represented, along with their relationships to each other and to the Service Access Point Queues.

Metrics

DataStage periodically receives the metrics file. The DataStage is notified on every period about the metrics file availability. The SAM statistics are then passed to the UBA for parsing and processing into Tivoli Netcool Performance Manager metrics.

Figure 1 shows that the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack manages the inventory of the resources and metrics, real, and abstract, in two ways:

- Complete data collection for inventory
- Event-driven data collection for inventory

Complete data collection

In the complete data collection, DataStage sends SOAP/XML requests to the Alcatel-Lucent 5620 SAM server for each SAM object type that is needed to run the inventory and metric data collection. Specifically, the request is for XML files that contain information about all instances of that object type and metrics. The requests from DataStage specify result filter of property values that are returned for each SAM object type. This filter operation limits the set of property values to the values that matter to the technology pack inventory.

DataStage partitions the Proviso database on IP address and merge metrics and inventory into one CSV file per period per subchannel that is then delivered to the UBAs in CSV format.

When the inventory and metrics are in separate bulk input files (as is the case in the Alcatel-Lucent 5620 SAM environment), a technology pack developer typically implements several types of bulk adapter design files, as described in "Bulk adapter design files" on page 8.

Event-driven data collection for inventory

The Alcatel-Lucent 5620 SAM LogToFile uses the JMS to view real-time events and alarm feed information from the managed network. For more information, see the *Alcatel- Lucent 5620 SAM-O OSS Interface Developer Guide*. DataStage establishes a JMS connection with SAM to receive inventory updates and notices of metric data file availability. SAM JMS client daemon listens for JMS messages from SAM and passes them to Apache ActiveMQ queue. DataStage job reads the messages from the queue and processes them.

Note: Alcatel-Lucent 5620 SAM-O is an open interface on the Alcatel-Lucent 5620 SAM. An OSS client application can access information through the Alcatel-Lucent 5620 SAM-O.
Figure 1 shows that in the event-driven inventory, DataStage processes JMS create, delete, and update messages.

DataStage resynchronizes the element names that are based on IP address and subchannel affiliations from the Tivoli Netcool Performance Manager database on startup. For newly encountered elements, a hash of the element name IP address is used to assign it to a subchannel. It is not necessary for DataStage to write the element to the Tivoli Netcool Performance Manager database. The UBAs generate the elements and other inventory. By default, the hash function is used and applied to the entire set of accounting or metric subchannels.

However, it is possible through configuration to restrict the assigned subchannels to a subset of the accounting or metric subchannels. This is provided in the event one subchannel starts to approach capacity. In addition, the user might explicitly override the subchannel affiliation for individual IP addresses. Intended to all for the case that a network has a handful of large devices that they want to ensure are evenly distributed across the available subchannels. Metrics and inventory are merged together and appended to a file destined for a subchannel with the IP address that determines the destination subchannel. After the data for a period is complete, the file is cut and staged atomically for UBA acquisition.

When the DataStage is started, it establishes the SAM metric data by using the new LogToFile feature. Availability of metric file is notified to the DataStage through JMS connection. DataStage then retrieves the file. DataStage uses SFTP connections for multiple downloads rather than establish new connections for every download.

DataStage also establishes a JMS connection with SAM to receive inventory updates, file available messages and control messages. The JMS process is running continuously. The Monitor stage in job periodically checks and restarts the JMS daemon if the daemon is not running. JMS daemon buffers messages and passes the messages to DataStage.

DataStage also processes the full inventory dump by using the existing FindToFile SOAP requests. Full dump on inventory is run on need basis. There is no automated full dump on startup. Warnings can be found in the logs that show missed JMS messages. These warnings can be monitored to initiate a full dump if required.

Finally, DataStage requires that all inventory update messages have information to help determine the IP address. DataStage requires the IP address to determine to which subchannel an inventory update must be routed.

Chapter 2. Devices and services

Details about Alcatel-Lucent SAM 5620 LogToFile server compatibility, supported devices, Alcatel-Lucent SAM 5620 LogToFile services, data collection model, bulk input file formats, and bulk adapter design files.

Alcatel-Lucent 5620 SAM server compatibility

Currently, the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack runs on the Alcatel-Lucent 5620 SAM Server Release 10 and Release 11.

Supported devices

The list of devices that are supported by the Alcatel-Lucent 5620 SAM LogToFile Technology Pack depends on the version of the technology pack.

Devices supported in this release

The Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack supports the following devices:

- Alcatel-Lucent 7750 Service Router
- Alcatel-Lucent 7710 Service Router
- Alcatel-Lucent 7705 Service Aggregation Router
- Alcatel-Lucent 7450 Ethernet Service Switch
- Alcatel-Lucent 7210 Service Access Switch
- Alcatel-Lucent OmniSwitch 6850
- Alcatel-Lucent OmniSwitch 6250
- Alcatel-Lucent 7750 MG
- Alcatel-Lucent 9471 WMM
- Alcatel-Lucent 9500 MPR

For more information about these devices, see http://www.alcatel-lucent.com.

How the devices are supported

The Alcatel-Lucent 5620 SAM LogToFile Technology Pack supports these devices in the following ways:

Defines data generation, data storage, and data collection methods
The Alcatel-Lucent 5620 SAM LogToFile Technology Pack communicates with the device through the SOAP/XML interface, and uses JMS for notification of inventory changes. For more information about the SOAP/XML interface and other components that are associated with the data collection model, see “Data collection model” on page 2.

Defines Tivoli Netcool Performance Manager properties
The Alcatel-Lucent 5620 SAM defines and manages all of the relevant objects that are associated with the device in the Alcatel-Lucent XML-based equipment package. The Alcatel-Lucent 5620 SAM LogToFile Technology Pack maps the appropriate set of SAM object properties that are defined in the equipment package to Tivoli Netcool Performance Manager properties. Typically, the Netcool Performance Manager property name is the same as

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the SAM object property name, except that the Netcool Performance Manager property name also has the prefix `sam`. For information about the properties that are currently supported by the Alcatel-Lucent 5620 SAM LogToFile Technology Pack, see the *IBM Tivoli Netcool Performance Manager: Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack Reference.*

Alcatel-Lucent 5620 SAM LogToFile services

Alcatel-Lucent 5620 SAM users can configure services such as VPRN, VPLS, and customer or subscriber sites to the core network at the SAPs.

A user might also configure a set of policies to manage different classes of traffic at the SAPs. A SAP can have one policy that is applied for ingress traffic, and another for egress (to the customer site). Alcatel-Lucent 5620 SAM has a predefined set of eight traffic classes:

be

l2

af

l1

h2

ef

h1

nc

In addition, the Alcatel-Lucent 5620 SAM LogToFile supports unicast, multicast, and broadcast IP traffic.

A user can define a policy to manage each combination of traffic classes and cast types uniquely. With eight classes and four types, 32 different combinations are possible. On a SAP, each unique combination is supported by a separate queue, which means up to 32 queues to be managed. On ingress, the SAPs support separate queues for the different casts of traffic. However, on egress, the SAPs do not support separate queues. Therefore, on egress, there is a maximum of eight queues.

The Alcatel-Lucent 5620 SAM represents these entities in the following objects:

SAPs SAP object represents a SAP. The SAP object has a `PolicyId` property.

Policies
Policy object represents the policy.

ForwardingClasses
ForwardingClass object represents one of the eight possible classes of traffic. This object has a `PolicyId` property that indicates the policy to which it belongs. If the object is an ingress ForwardingClass, it has four queue IDs, one each for Unicast, Multicast, Broadcast, and Other. If the object is an egress ForwardingClass, it has one queue ID.

Service queues
Egress Service Queue object or an Ingress Service Queue object represents a service queue on a SAP.

Bulk input file formats

DataStage produces one file for each UBA per period. These files contain records of inventory and metric data.

The inventory and metrics data records are in the CSV format. The initial integer identifier of the CSV files specifies a record type, and the subsequent fields contain the actual data of the record. The output CSV file from the DataStage has two sections:

1. Header
2. Data

Header starts with 0 (zero), and is called as the 0-record schema. Data starts with record type, which is identical to the one that is defined in the header.

Sample Header

```
0,"{""recordType"":17,""dataType"":""C"",""className"":
""equipment.Shelf"",""fieldNames"":[""administrativeState"",
""deviceState"",""displayedName"",""equipmentState"",
""numberOfCardSlots"",""objectFullName"",""operationalState"",
""shelfId"",""shelfName"",""shelfType"",""siteId"",""siteName""]}"
```

Sample data

```
17,"noop","deviceStateUnknown","sim242_60","indeterminate","12",
"network:138.120.242.60:shelf-1","unknown","1","sim242_60",
"sr_shelf_12Slot","138.120.242.60","sim242_60"
```

Bulk input file schema

The UBA input has a schema that works on CSV input files. The general format of a CSV file is as follows:

```
0, "{"recordType": 1, "dataType":"input source", "className": "TheClassName",
"fieldNames": ["field1", "field2", ... "fieldn"]}"
```

recordType

Specifies an integer that is used to identify the record format.

dataType

Specifies the source of the record data. The sources can be "A", "D", "C", or "M".

The following list contains the definition of 0-Record CSV data type:

- `A` - Attribute Change
- `D` - Object Deletion
- `C` - Object Creation or Full dump
- `M` - Metrics

Note: The JMS inventory messages are identified by data types of A, D and C.

className

Specifies the Alcatel-Lucent class name that is used to identify the class (inventory or metric) that this record belongs to. The class name is used by the UBA to identify the mapping between the class and the record identifier.

fieldNames

Specifies an array of the field names that is available within the record that is defined.

Bulk adapter design files

Tivoli Netcool Performance Manager bulk adapters support bulk input files in the CSV format. The DataStage server produces data in CSV format and uses JMS for notification of inventory changes.

Each UBA technology pack provides at least one bulk adapter design file to define the data format supported by that technology pack. Technology pack developers implement bulk adapter design files using JavaScript®. Some technology packs provide several bulk adapter design files.

Typically, a bulk adapter design file can process both inventory and metrics data from the same bulk input file, and provides a function that creates the bulk collection formula names. When the inventory and metrics are located in separate bulk input files (as is the case in the Alcatel-Lucent 5620 SAM environment), a technology pack developer implements several types of bulk adapter design files. The Alcatel-Lucent 5620 SAM LogToFile Technology Pack provides the UBA design files.

UBA design files

UBA is a DataChannel application that interprets and parses bulk input files that contain inventory and metrics data, or (as is the case in the Alcatel-Lucent 5620 SAM environment) metrics data only. A technology pack developer implements UBA design files that tell the UBA application how to interpret and parse these bulk input files.

The current version of the Alcatel-Lucent 5620 SAM LogToFile Technology Pack supports two UBA Bulk Collectors. The two main UBA design files are as follows:

- The `SAMUBAAdaptor_polled.js` file is used by the first UBA Bulk Collector and handles most of the metrics.
- The `SAMUBAAdaptor_accounting.js` file is used by the second (accounting) UBA Bulk Collector and handles the accounting metrics. These metrics are service-oriented metrics.

You can find the UBA design files in the Alcatel-Lucent 5620 SAM LogToFile Technology Pack from the following location:
`datachannel/scripts/alcatel_5620_sam_log2file`

Chapter 3. Installation and configuration of IBM InfoSphere Information Server and related components

Describes how to install and configure the various IBM InfoSphere Information Server and other related components that are required for Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack such as:

Components

- IBM InfoSphere Information Server 8.7
- IBM InfoSphere Information Server Client 8.7
- Apache ActiveMQ 5.5.1
- Oracle Client 11g

Planning for IBM InfoSphere Information Server software installation

Ensure that hardware and software requirements for the product modules that you want to install are met on your computers.

For latest information about the installation requirements, see these resources:

- System Requirements

  Restriction: You can install the IBM InfoSphere Information Server on a computer that has Red Hat Enterprise Linux x86_64 version 5.5 or later.
- Release Notes

Installing IBM InfoSphere Information Server 8.7 software

IBM® InfoSphere™ Information Server includes a set of collaborative product modules and components that you can distribute across multiple computers. This section describes how to install and remove the InfoSphere Information Server and InfoSphere Information Server client software.

Installing IBM InfoSphere Information Server by using the wizard (graphical mode)

You can run the installation program locally by using a web browser on the target computer. Alternatively, you can use a web browser on any system in a distributed environment.

Before you begin

During the initial installation session, install the required product modules that you plan to use either now or in future. If you install only some of the product modules now, and then install fixes and service packs, you must reinstall the fixes and service packs as you add the product modules later.

Note: Ensure that the system has only RHEL 5.5 or later installed and no other components on it. You can install the other components as and when required.

Ensure that you disable the firewall by using the following step:

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- Click **System** > **System Firewall** > **Disable Firewall** to disable the firewall. Disable the firewall temporarily until the installation is complete.

About this task

When you first start the installation program, it presents a non-graphical interface. The program starts a self-contained web server on the computer. You can then start a web browser on the computer or on a remote computer and access the graphical interface. After you enter your settings in the wizard pages, the program stores your settings in a response file. If you run the installation program again, you can load your settings from this file into the program instead of entering them again.

Procedure

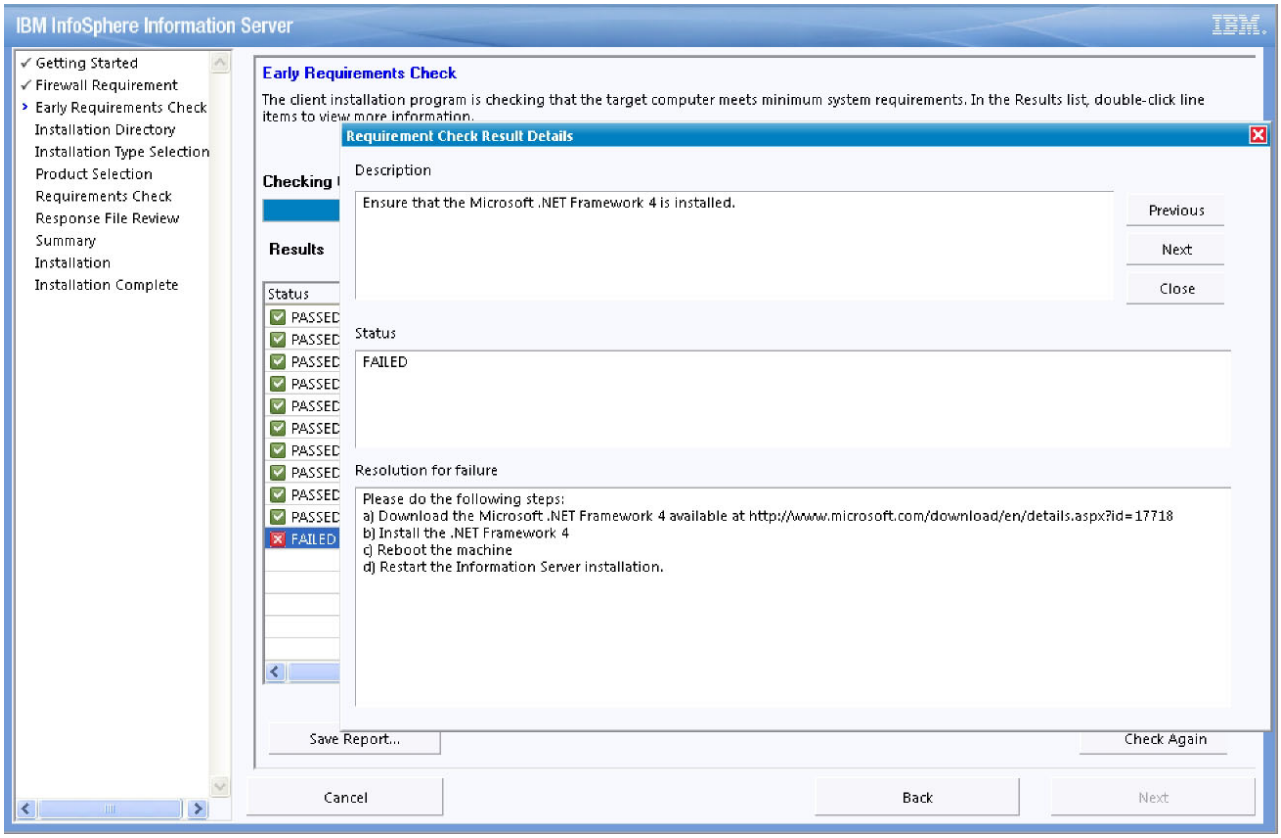
1. Extract the `InfoSvr_v8.7_Linux64.tar.gz` file to a location of your choice. The installation media is in the `is-suite` directory.
2. Change to the `is-suite` directory and run the installation program as `root` user by using the following command:

   ```
   ./setup [-verbose]
   ```

   The `-verbose` option is optional. The option causes the installation program to display log messages to the console and also write them to the log file. If the `-verbose` option is not specified, log messages are written to the log file only. Several messages are displayed. The program then displays a message about how to access the installation wizard:

   ```
   ======> Enter one of the following URLs to your web browser to begin the installation process:
   http://localhost:8080/ISInstall
   https://localhost:8443/ISInstall
   ```

3. Open a web browser on the computer or on a remote computer, and go to one of the addresses that is listed in the messages from starting the installation program.
4. Select a language from the menu for the installation program to use and click **Login**. This selection applies only to this installation session. Later in the installation process, you can select the language to apply to the InfoSphere Information Server installation.
5. Click **Next** on the prompts in the installation program to continue to install the product. The installation program runs an **Early Requirements Check** to ensure that your installation is configured correctly as shown in the figure:



The page displays the results of the check as PASSED or FAILED. If the check found issues that might cause problems with the installation, it is marked as WARNING on the page.

For more information about resolving the failed installation prerequisites, see http://pic.dhe.ibm.com/infocenter/iisinfsv/v8r7/topic/com.ibm.swg.im.iis.productization.iisinfsv.install.doc/topics/wsisinst_install_prereq_check_fails.html.

6. When all early requirements checks are passed, click **Next**.
7. Click the default path where you want to install the Information Server in the **Installation directory** field, and then click **Next**. By default, the installation directory is `/opt/IBM/InformationServer`.
8. Click **New installation** in the "Installation Type Selection" page, and then click **Next**.
9. Click to select all the tiers in the "Tier Selection" page and click **Next**.
10. Enter the password for the `root` user in the **Password for root** field and click **OK**.
11. Click **Select All** in the "Product Selection" page and click **Next**.
12. Accept the terms and conditions in the "Software License Agreement" page and click **Next**.
13. Select the **IBM InfoSphere DataStage (Select this edition to develop parallel and server jobs)** check box and clear the **IBM InfoSphere DataStage Balanced Optimization** check box in the "IBM InfoSphere DataStage Installation Options" page and click **Next**.
14. Click **Next** in the "High Availability Server Cluster Configuration" page as there is no support for High Availability Server in the present context.

15. Click **Install WebSphere Application Server** in the "Application Server Options" page and click **Next**.
16. Click **Browse** to select the installation directory for the WebSphere Application Server. By default, the installation directory is `/opt/IBM/WebSphere/AppServer`.
17. Select the **Customize WebSphere Application Server profile ports** check box in the "IBM WebSphere Application Server Installation" page, and then click **Next**.
18. Verify that each port number is unique in the "IBM WebSphere Application Server Profile Ports Assignment" page and click **Next**.
19. Enter the Application Server administrator user name and password and click **Next**.
20. Enter the InfoSphere Information Server administrator user name and password and click **Next**.
21. Click **Install IBM DB2 9.7 Enterprise Server Edition** to install and create the databases within DB2 and click **Next**.
22. Specify the default directory where you want to install the DB2 database system. By default, the installation directory is `/opt/IBM/db2/v9`.
23. Click **Create a user as an instance owner** in the "IBM DB2 Instance User" page and enter the user information, and then click **Next**. Also, enter a port number for the new instance. You receive a conformation after the user is created. Click **OK**.
24. Click **Create a new user as a fenced user** in the "DB2 Fenced User Information" page and enter the DB2 fenced user information and then click **Next**.
25. Click **Create the user as administrator user** in the "DB2 Administrator User information" page and enter the administrator user information, and then click **Next**
26. Enter the metadata repository owner information, database name, database instance name, and database location in the "Metadata Repository Configuration" page, and then click **Next**.
27. Enter the metadata repository owner information, database name, database instance name, and database location in the "Staging Area Configuration" page, and then click **Next**. The default agent port settings that are displayed in the "IBM InfoSphere Information Server Agent Ports Configuration" page work in most configurations.
28. Click **Next**.
29. Enter the two TCP/IP port numbers to use for the IBM InfoSphere DataStage and QualityStage job monitor in the "Job Monitor Ports Configuration" page, which takes snapshots of job performance. The job monitor uses one port to request job information and the second port to report job information. The default port settings are acceptable in most configurations. The default settings are 13400 and 13401 for the first and second ports.
30. Enter the unique tag information for the engine in the **ITAG** field and port number in the **RPC port number** field. If you are not installing multiple engine instances on the same computer, you can skip this step.
31. Click **Create user as the IBM InfoSphere DataStage Administrator** in the "IBM InfoSphere DataStage Administrator" page and enter the user information, and then click **Next**.
32. Clear the **SAS** check box and click **Next**. The existing job does not use SAS and you can ignore this step.

33. Click **Add Projects** and enter the InfoSphere DataStage projects to create in the "IBM InfoSphere DataStage Projects" page. You must create at least one project during installation. By default, a project by name `dstage1` is created. Remove the `dstage1` project and add the `UDM` project.
34. Click **Next**. The installation program runs a system requirements check for the selections that are made. The page displays the results of the check as PASSED or FAILED. If the check found issues that might cause problems with the installation, it is marked as WARNING on the page. To resolve the issues that are found during this check, see http://publib.boulder.ibm.com/infocenter/iisinfsv/v8r7/topic/com.ibm.swg.im.iis.productization.iisinfsv.install.doc/topics/wsisinst_install_prereq_check_fails.html
35. Click **Next** if all the system requirements checks are passed.
36. Click **Install IBM InfoSphere Information Server and save my settings in a response file** in the "Response File Review" page and click **Next** to begin the installation.
    Or, enter a name and location for the response file in the **Response file location** field in the "Response File Review" page. By default, it is available in the following location: `/opt/IBM/InformationServer/response.txt` and click **Next** to begin the installation. You can choose to cancel the installation and use the saved response file in a later session. The "Post Installation Summary for Current Computer" page is displayed that contains the product, tiers, and product components that you installed, and information about how long the installation program ran and whether the installation was successful.
37. Click **Install**.
38. Click **Finish**.

What to do next

If you face any installation problems, resolve them with this installation troubleshooting information from here:
http://publib.boulder.ibm.com/infocenter/iisinfsv/v8r7/topic/com.ibm.swg.im.iis.productization.iisinfsv.install.doc/topics/wsisinst_ts_is_container.html.

You can find more troubleshooting information in the information centers and customer support technical notes for various product modules and components.

Installing IBM InfoSphere Information Server client by using the wizard (graphical mode)

You can run the installation program locally by using a web browser on the target computer. Alternatively, you can use a web browser on any system in a distributed environment.

Before you begin

During the initial installation session, install all of the product modules that you plan to use either now or in the future unless explicitly stated otherwise. If you install only some of the product modules now, and then install fixes and service packs, you must reinstall the fixes and service packs if you add product modules later. Ensure that you disable the firewall by using the following step:

- Click **Control Panel** > **System and security** > **Windows Firewall** to disable the firewall. Disable the firewall temporarily until the installation is complete.

About this task

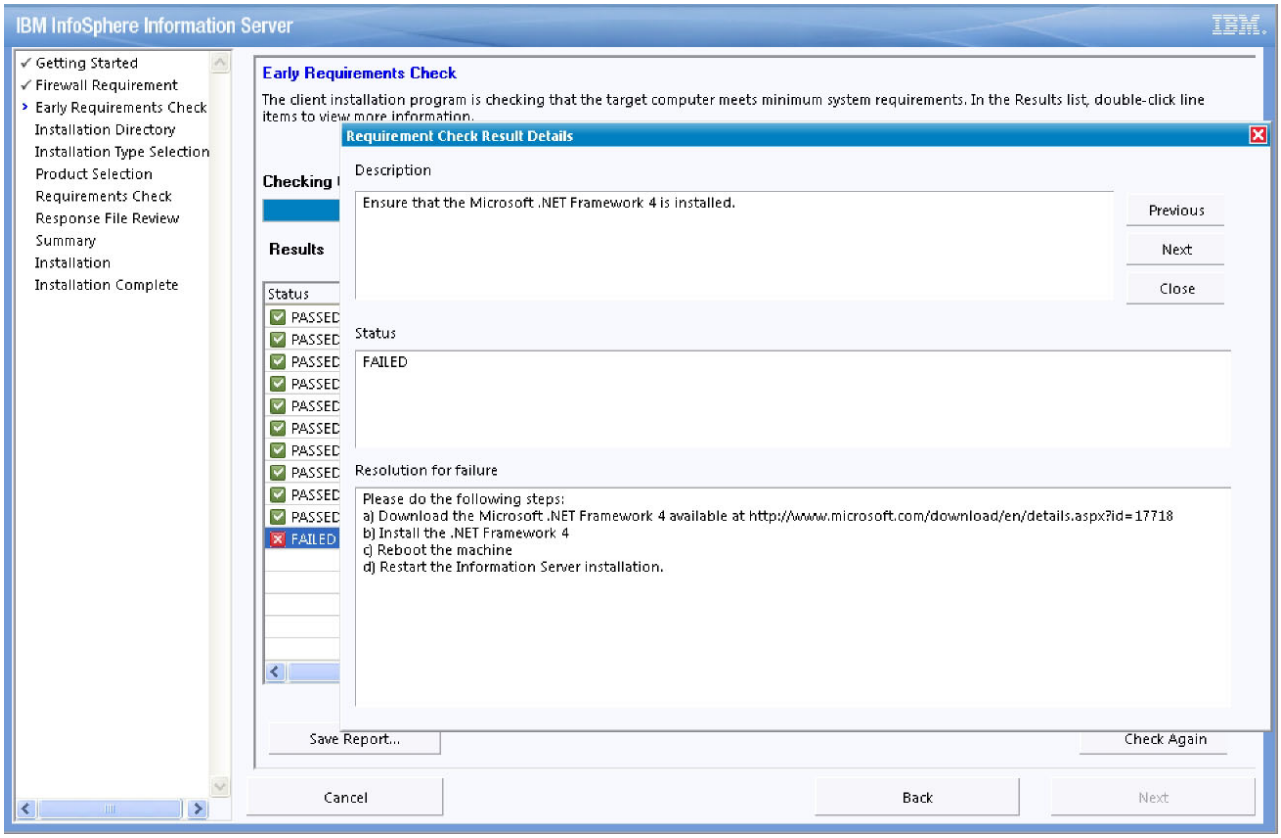
When you first start the installation program, it presents a non-graphical interface. The program starts a self-contained web server on the computer. You can then start a web browser on the computer or on a remote computer and access the graphical interface. After you enter your settings in the wizard pages, the program stores your settings in a response file. If you run the installation program again, you can load your settings from this file into the program instead of entering them again.

Procedure

1. Extract the `Infosvr_Client_v8.7_Win.zip` file to a location of your choice. For example, `C:\is-client`
2. Double-click the installation program, `setup.exe`. Several messages are displayed. The program then displays a message about how to access the installation wizard:

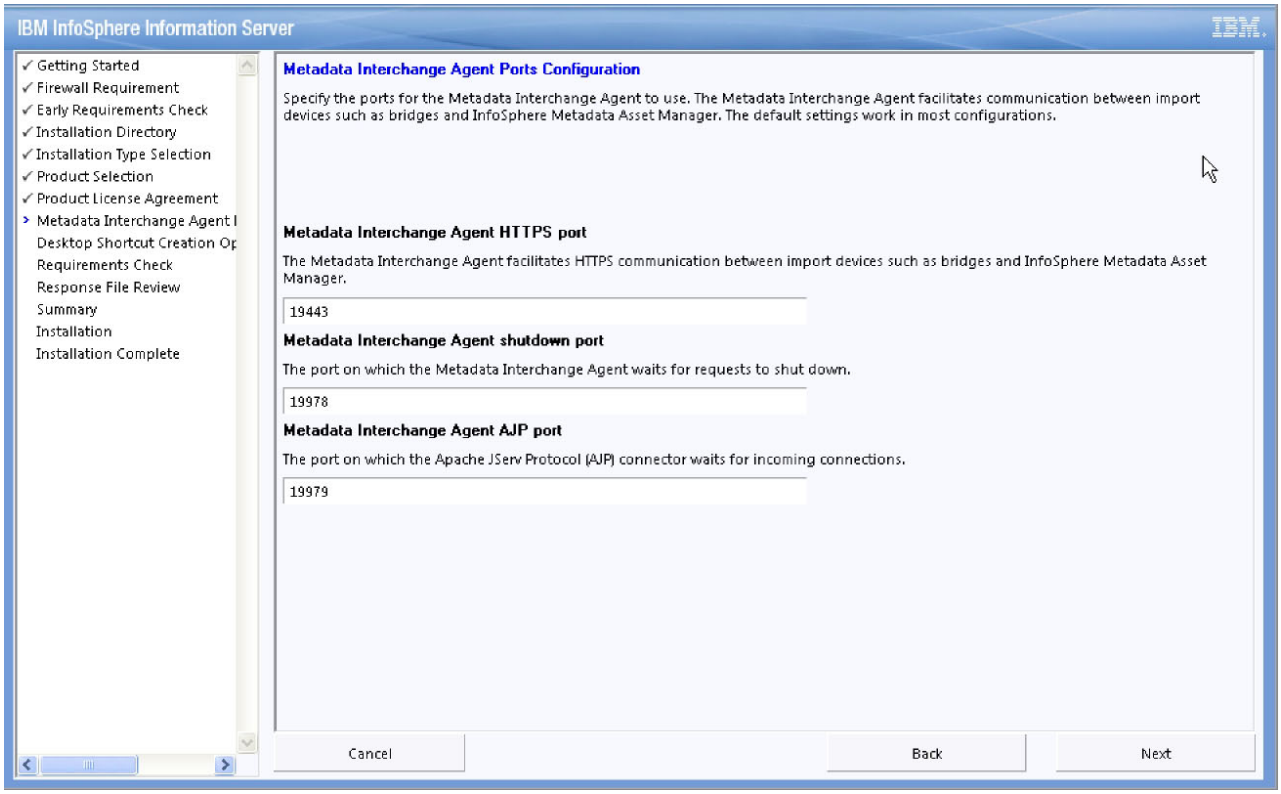
   ```
   ======> Enter one of the following URLs to your web browser to begin the installation process:
   http://localhost:8080/ISInstall
   https://localhost:8443/ISInstall
   ```

   The installation program automatically starts the default web browser on the local computer to display the graphical interface.
3. Select a language from the menu for the installation program to use and click **Login**. This selection applies only to this installation session. Later in the installation process, you can select the language to apply to the InfoSphere Information Server installation.
4. Click **Next** on the prompts in the installation program to continue to install the product. The installation program runs an **Early Requirements Check** to ensure that your installation is configured correctly as shown in the figure:



The page displays the results of the check as PASSED or FAILED. If the check found issues that might cause problems with the installation, it is marked as WARNING on the page.

5. When all early requirements checks are passed, click **Next**.
6. Click **Browse** to select the directories where you want to install the Information Server in the **Installation directory** field, and then click **Next**. By default, the installation directory is `C:\IBM\InformationServer`
7. Click **New installation** in the "Installation Type Selection" page, and then click **Next**.
8. Click **Select All** in the "Product Selection" page and click **Next**.
9. Accept the terms and conditions in the "Software License Agreement" page and click **Next**.
10. Enter the port numbers in the "Metadata Interchange Agents Ports Configuration" page. The default port numbers are as shown in the figure:


IBM InfoSphere Information Server
IBM
Getting Started
Firewall Requirement
Early Requirements Check
Installation Directory
Installation Type Selection
Product Selection
Product License Agreement
Metadata Interchange Agent I
Desktop Shortcut Creation Op
Requirements Check
Response File Review
Summary
Installation
Installation Complete
Metadata Interchange Agent Ports Configuration
Specify the ports for the Metadata Interchange Agent to use. The Metadata Interchange Agent facilitates communication between import devices such as bridges and InfoSphere Metadata Asset Manager. The default settings work in most configurations.
Metadata Interchange Agent HTTPS port
The Metadata Interchange Agent facilitates HTTPS communication between import devices such as bridges and InfoSphere Metadata Asset Manager.
19443
Metadata Interchange Agent shutdown port
The port on which the Metadata Interchange Agent waits for requests to shut down.
19978
Metadata Interchange Agent AJP port
The port on which the Apache JServ Protocol (AJP) connector waits for incoming connections.
19979
Cancel
Back
Next

11. Select the **Create desktop shortcuts** check box in the "Desktop shortcut creation option" page and click **Next**. After the installation program has collected your selections, it runs another, more detailed system requirements check in the "System Requirements Check" page that is based on your selections. During this check, it analyzes your computer resources and file system to determine whether the installation is likely to succeed.
12. Click **Next** if all the system requirements checks are passed. For any warnings that are displayed, you can select the **Ignore "WARNING" items and continue** check box, and then click **Next**.
13. Specify a name and location for the response file in the **Response file location** field in the "Response File Review" page. By default, it is: `C:\IBM\InformationServer\response.txt`. You can choose to cancel the installation and use the saved response file in a later session.
14. Click **Install IBM InfoSphere Information Server and save my settings in a response file** in the "Response File Review" page and click **Next**. A "Preinstallation Summary for the Current Computer" page is displayed that contains the product, installation directory, tiers, and disk space information.
15. Click **Install**. When the installation process is complete, a "Post Installation Summary for the Current Computer" page is displayed that contains the product, tiers, and product components that you installed, and information about how long the installation program ran and whether the installation was successful.
16. Click **Finish**.

What to do next

If you face any installation problems, resolve them with this installation troubleshooting information from here:

http://publib.boulder.ibm.com/infocenter/iisinfsv/v8r7/topic/com.ibm.swg.im.iis.productization.iisinfsv.install.doc/topics/wsisinst_ts_is_container.html.

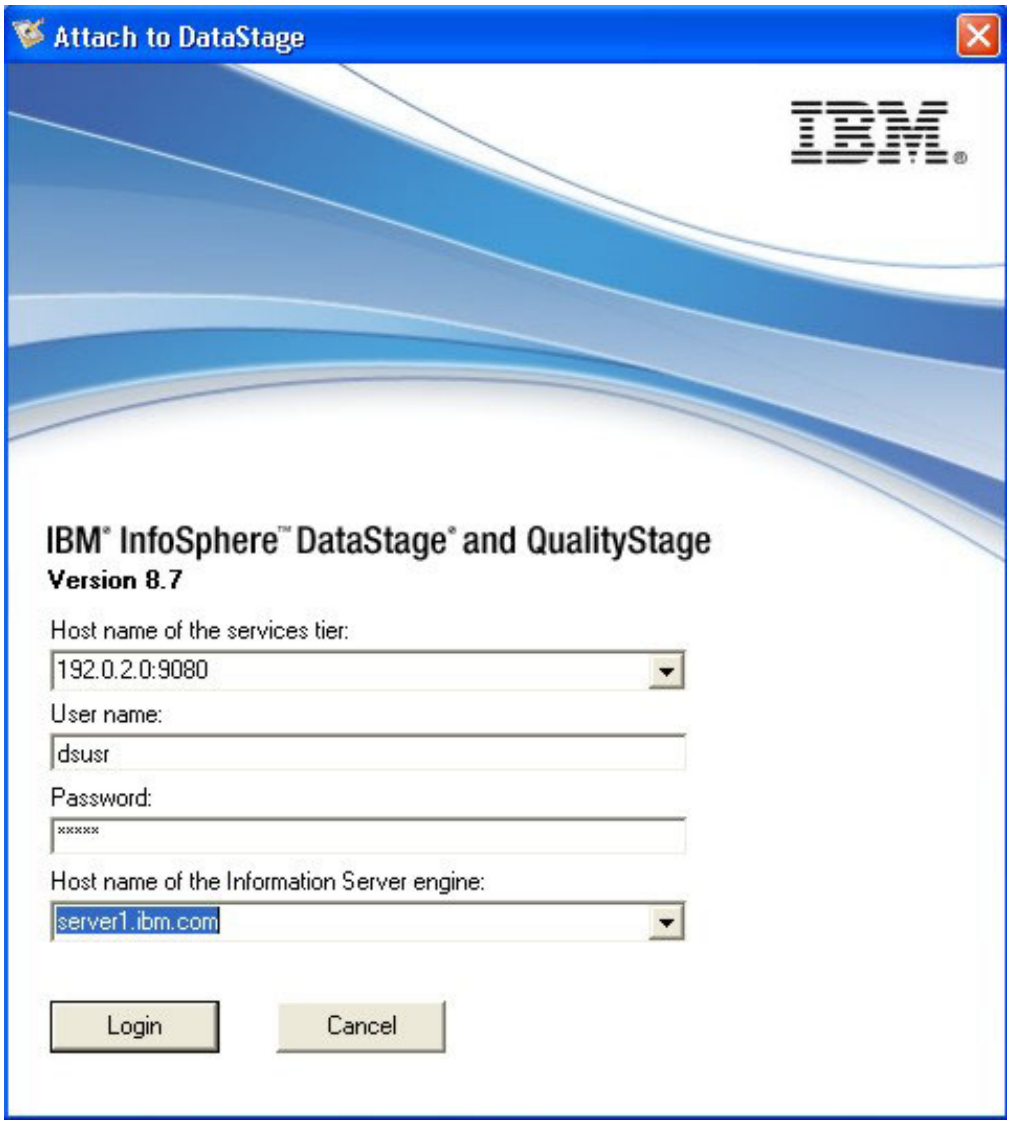
You can find more troubleshooting information in the information centers and customer support technical notes for various product modules and components.

Verifying and testing the installation

After you install and configure InfoSphere DataStage and InfoSphere QualityStage™, test the installation by logging in to the Administrator and Designer clients.

About this task

For example, open the IBM InfoSphere DataStage and QualityStage Administration client by providing the information as follows and click **Login**:



Installing Apache ActiveMQ

Apache ActiveMQ is an open source software that is customized and bundled with Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack JAR file. Apache ActiveMQ is responsible for buffering messages that are received from SAM JMS for the DataStage Job. Apache ActiveMQ is an interface to JMS poller to pass messages.

About this task

Apache ActiveMQ must be installed on the same server where the IBM InfoSphere Information Server server is installed.

Procedure

1. The `tnpm-apache-activemq-5.5.1-bin.tar.gz` file is available in the technology pack jar. After pack installation, you must be able to find the Apache ActiveMQ bundle at `$PVM_HOME/APFiles/alcatel_5620_sam_log2file/datastage/`.
2. As `root` user, extract the file to `/opt` directory by using the following command:

   ```
   tar zxvf tnpm-apache-activemq-5.5.1-bin.tar.gz
   ```

3. Add `activemq.rc` file as a system service by linking the file in `/etc/init.d` by using the following commands:

   ```
   ln-s /opt/apache/activemq/5.5.1/bin/activemq.rc /etc/init.d/activemq.rc
   /sbin/chkconfig --add activemq.rc
   /sbin/chkconfig activemq.rc on
   /sbin/chkconfig service active
   ```

4. Start Apache ActiveMQ by using the following command:

   ```
   ./activemq.rc start
   ```

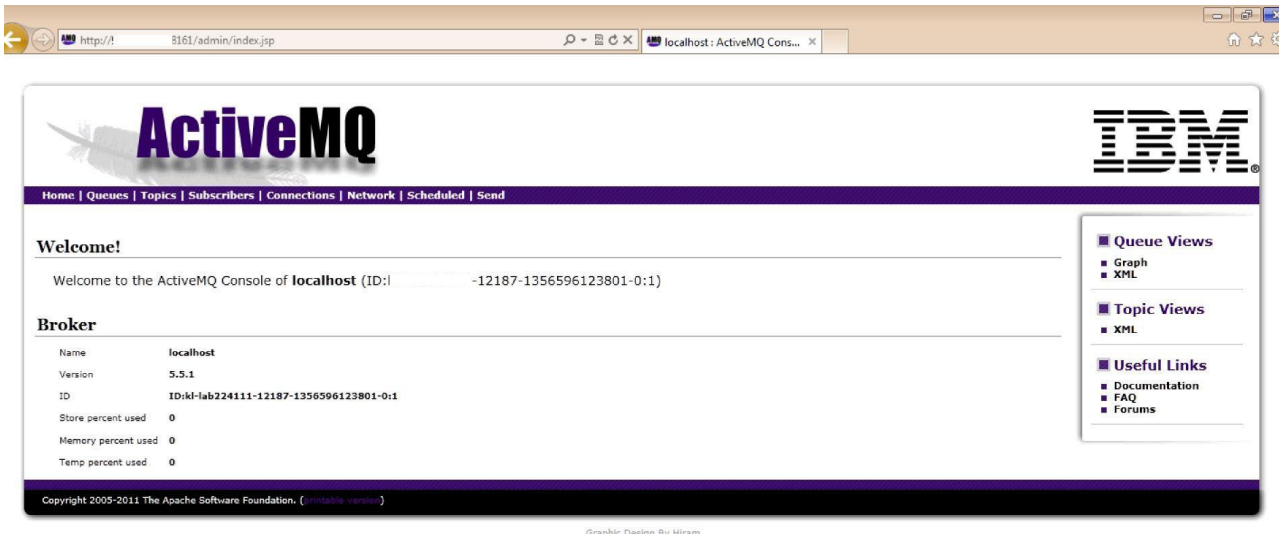
   If you want to stop the Apache ActiveMQ, you can use the following command:

   ```
   ./activemq.rc stop
   ```

5. To verify that ActiveMQ installation is successful, do one of the following steps:
   a. Log in to the server where ActiveMQ is installed by using the following command:

      ```
      http://<host_name>:8161/admin/
      ```

      If the web page opens as shown in the figure, the installation is successful:



b. Or
To check that the ActiveMQ service is running, give the following command:

```
ps -ef |grep active
```

Installing Oracle 11g client

Oracle 11g is required for DataStage to establish connection with Proviso DB. On Job start, DataStage connects to Proviso DB to obtain all collector information, which can be used for data partition for UBA.

Before you begin

Ensure that all dependencies are installed and kernel parameters that are updated so.

- To check the kernel parameter, use the following command:

```
/sbin/sysctl -a | grep <PARAMETER>
```

- To update the kernel parameter, use the following command:

```
/sbin/sysctl -w <PARAMETER>="<VALUE>"
```

Permanently, change the kernel parameter by modifying the `/etc/sysctl.conf` file.

About this task

Oracle 11g client must be installed on the same server where the IBM InfoSphere Information Server server is installed.

Procedure

1. Install Oracle 11g client. For more information about Oracle client installation, see http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/topic/com.ibm.tnpm.doc/oracle/ctnpm_ora_installora10gclient.html.

Note: The 64-bit Oracle client must be installed.

2. Configure the tnsname.ora file that is located in $ORACLE_HOME/network/admin to connect to Tivoli Netcool Performance Manager wireline.
3. Update the DataStage dsenv file that is located in $DS_HOME. By default, the $DS_HOME is /opt/IBM/InformationServer/Server/DSEngine.
4. Create a soft link to libccora11g.so by using the following command:

```
cd $ORACLE_HOME/lib
ln -s /opt/IBM/InformationServer/Server/StagingArea/Installed/OracleConnector/Server/linux/libccora11g.so
licccora11g.so
```

   Typically, The libccora11g.so is located in the following path: /opt/IBM/InformationServer/Server/StagingArea/Installed/OracleConnector/Server/linux/libccora11g.so.
5. Update the $DSHOME/dsenv as dsadm user. The following parameters must be included:

```
export ORACLE_HOME
export TNS_ADMIN
update LD_LIBRARY_PATH  to include $APT_ORCHHOME/bin, $ORACLE_HOME/lib and $ORACLE_HOME/rdbms/lib
update PATH       to include $APT_ORCHHOME/bin and $ORACLE_HOME/lib
export ORACLE_BASE
update LIBPATH     to include $ORACLE_HOME/rdbms/lib & $ORACLE_HOME/lib
```

6. Run the install.liborchoracle script by using the following steps:
   a. Source the environment by using the following commands:

```
export DSHOME=/opt/IBM/InformationServer/Server/DSEngine
export APT_ORCHHOME=/opt/IBM/InformationServer/Server/PXEngine
```

   b. Run the install.liborchoracle script by using the following command:

```
/opt/IBM/InformationServer/Server/StagingArea/Installed/PxOracle/install/install.liborchoracl
```

7. Restart the DataStage as root by using the following commands:

```
/etc/init.d/ds.rc stop
/etc/init.d/ds.rc start
```

Chapter 4. Configure the InfoSphere Information Server components

Describes the configuration tasks.

Opening the IBM InfoSphere Information Server web console

Use the InfoSphere Information Server web console to manage security, view scheduled tasks, work with reports, or perform tasks that are related to IBM® InfoSphere® Business Glossary or the Information Services catalog.

Before you begin

To access the web console, determine the URL to use, configure your browser, and go to the console window.

About this task

The URL for the IBM® InfoSphere® Information Server web console differs depending upon the IBM WebSphere® Application Server communication protocol and configuration. The syntax of the URL is as follows:
protocol://*host*:*port*/ibm/iis/console

protocol is the communication protocol: either http or https. *host* and *port* differ depending upon the communication protocol and WebSphere Application Server configuration (clustered or non-clustered).

For example, in a configuration where clustering is not set up, the HTTPS URL might be:
https://<myhost.example.com>:9443/ibm/iis/console

Configuring web browser to open the IBM InfoSphere Information Server web console

The IBM® InfoSphere® Information Server web console is supported by both Microsoft Internet Explorer and Mozilla Firefox. You must do these steps in your preferred web browser before you use the IBM InfoSphere Information Server web console.

About this task

- For information about supported browsers, see the InfoSphere Information Server system requirements at http://www-01.ibm.com/software/data/infosphere/info-server/overview/requirements.html.
- For more information about IBM InfoSphere Information Server, see http://publib.boulder.ibm.com/infocenter/iisinfsv/v8r7/topic/com.ibm.swg.im.iis.found.moz.rc.common.doc/topics/iisinfsrv_mcom_overview.html.
- Determine the URL to use as described in "Opening the IBM InfoSphere Information Server web console."
- If HTTPS is enabled in the URL, follow the browser prompts to accept the certificate and proceed to the login page.

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Procedure

1. Open a web browser, and go to the console. The URL to use depends upon the IBM WebSphere Application Server communication protocol and configuration in use.
2. Type your user name and password. By default, use `wasadmin` user and password.
3. Click **OK** to open the **Home** tab.

Configuring Microsoft Internet Explorer to open the IBM InfoSphere Information Server web console

Procedure

1. Enable JavaScript:
   a. Click **Tools** > **Internet Options** .
   b. On the **Security** tab, click **Custom Level**.
   c. In the Security Settings window, select **Scripting** > **Active Scripting** > **Enable**.
2. Set the browser to accept cookies for the InfoSphere Information Server host site.
   a. Click **Tools** > **Internet Options**.
   b. On the **Privacy** tab, click **Sites**.
   c. In the **Address of Web site** field, enter the InfoSphere Information Server host name.
   d. Click **Allow**.
   e. Click **OK**.
3. Enable pop-up windows for the URL of the IBM InfoSphere Information Server web console:
   a. Click **Tools** > **Pop-up Blocker** > **Pop-up Blocker Settings** or turn off the pop-up window blocker.
   b. If you selected the settings, type the URL and click **Add**.
4. Specify that the pages are refreshed every time that you visit the site:
   a. Click **Tools** > **Internet Options** and on the **General** tab, click **Settings**. Select **Settings** in the Browsing history section.
   b. Select **Every time I visit the webpage** or **Automatically** and click **OK**.
5. Optional: Disable the display of friendly HTTP error messages. Follow these steps:
   a. Click **Tools** > **Internet Options**.
   b. On the **Advanced** tab, clear **Browsing** > **Show friendly HTTP error messages**.

Configuring Mozilla Firefox to open the IBM InfoSphere Information Server web console

Procedure

1. Enable JavaScript:
   a. Click **Tools** > **Options** in the **Content** tab.
2. Set the browser to accept cookies for the InfoSphere Information Server host site.
   a. Click **Tools** > **Options**.
   b. On the **Privacy** tab, click the **Accept cookies from sites** option or click **Exceptions and add the site to the allowed site** list by entering the host name and click **Allow**.
3. Enable pop-windows for the URL of the web console.
   a. Click **Tools** > **Options**.
   b. Select the **Contents** tab and either clear the **Block pop-up windows** option or click **Exceptions** and add the site to the allowed list by entering the host name and click **Allow**.

Creating `dsadm` users in the IBM InfoSphere Information Server web console

You must create a user for each person that must log in to IBM InfoSphere Information Server.

About this task

Ensure that you have suite administrator authority. To create a user, follow these steps:

Procedure

1. In the IBM InfoSphere Information Server web console as `wasadmin` user, click the **Administration** tab.
2. In the Navigation pane, select **Users and Groups** > **Users**.
3. In the Users pane, click **New User**.
4. In the **Create New User** pane, provide information about the user. Give the following information:

Option	Description
User name	`dsadm`. **Note:** You must create a `dsadm` user. The `dsadm` user is required for all operations on DataStage job in Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.
Password	Give the same password as you set for `dsadm` UNIX user.
First/Last Name	`dsadm`

5. In the Roles pane, specify all roles.
6. In the Suite Component pane, select whether the user has any suite component roles. To log in to any of the product modules, a user must have the suite user role. Also, add at least one suite component role for each suite component that you want the user to access. For example, if you are creating a user that

accesses IBM InfoSphere Information Analyzer, you must assign the suite user role, and also the Information Analyzer Project Administrator, Data Administrator, or User role.

7. Link the `dsadm` user to Server Engine by using these steps:
   a. Expand **Domain Management** from Navigation pane.
   b. Click **Engine Credentials**.
   c. Select the server.
   d. Open **Configuration**.
   e. Select the **Share User registry between Infosphere Information Server and its engine** option.
   f. Click **Save** and **Close**.
8. Click **Save** and **Close** to save the user information in the metadata repository.

Chapter 5. Deploying Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 DataStage jobs

You can design InfoSphere DataStage Administrator jobs by using the IBM InfoSphere DataStage and QualityStage Designer client.

To deploy DataStage LogToFile, the following clients are used:

Administrator Client
You can create and configure the UDM project.

Designer Client
You can import, configure, and compile the UDM project.

Director Client
You can run and monitor a job.

The Designer client uses a repository where you can store the objects that you are creating as part of the design process. These objects can be reused by other job designers.

Note: You must not modify the job design.

Jobs and their associated objects are organized in projects. DataStage administrators create projects by using the Administrator client. When you start the Designer client, you specify the project that you work, and everything that you do is stored in that project.

When your job designs are finished, they are run in the Director client. No data is moved or transformed until you actually run the job. When you start the Director client, you specify the project that contains the jobs to run.

Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack job design

The features of Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack job design are as follows:

LogTofile interface to SAM server
LogToFile solution relieves loads from SAM server thus allowing SAM server to support higher performance load.

Class record filter option
Data from SAM server are not filtered. Filtering the class records reduces loads from DataStage and UBA processing.

Multiple UBA Partition
This solution supports multiple sets of Accounting and Performance UBAs to support UBA and Data Channel scalability.

Period window handling
Class Data from LogToFile might not arrive within the period interval. To ensure data completeness, job waits for late data files and merge the data into its correct period interval.

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CSV output for UBAs

CSV file requires less processing effort that is compared to XML. Multiple small files are bundled in single UBA input to improve I/O utilization.

Setting up a project

A project is a container that organizes and provides security for objects that are supplied, created, or maintained for data integration, data profiling, quality monitoring, and so on. Projects are a method for organizing your work. You define data files, stages, and build jobs in a specific project. A project can contain one or more jobs. Any of the metadata objects in a project (such as jobs or table definitions) can be grouped logically and organized into folders. You can define security at the project level. Only users who are authorized for your project can access your jobs.

Procedure

1. Log in to the Administrator client as `dsadm`.
2. Click the **Projects** tab in the Administrator window.
3. Click the **Add** button.
4. Enter the project name in the **Name** field. The project name must be given as `UDM`. You must create the UDM project only if you have not created in Step 35 of "Installing IBM InfoSphere Information Server by using the wizard (graphical mode)" on page 9. UDM is automatically appended to the default location for the new project. You cannot add a project to a location that exists.
5. Click **OK**. You can see the project that you created in the following directory: `/opt/IBM/InformationServer/Server/Projects/UDM`
6. Create a directory by name `udm` inside the project that you created by using the following commands:

   ```
   cd /opt/IBM/InformationServer/Server/Projects/UDM
   umask 002
   mkdir udm
   ```

   You can install and import the job in this directory.

Extracting the job archive file

Before you begin

Ensure that you have created a project by name `UDM` and a subdirectory by name `udm` inside the project directory. The `ds_job_v`*m*`.`*n*`.0.0.`*b*`.dsx` is packaged inside the `alcatel_5620_sam_ds_v`*m*`.`*n*`.0.0_build_`*b*`.tar.gz` file from the technology pack JAR file. Note that *m* denotes version number, *n* denotes major build number, and *b* denotes minor build number.

Procedure

1. Extract the `alcatel_5620_sam_ds_v`*m*`.`*n*`.0.0_build_`*b*`.tar.gz` file in `/opt/IBM/InformationServer/Server/Projects/UDM/udm` by using the following command:

   ```
   tar zxvf alcatel_5620_sam_ds_vm.n.0.0_build_b.tar.gz
   ```

2. Open IBM InfoSphere DataStage and QualityStage Administrator on your desktop.
3. Log in with the user name and password of `dsadm` with the DataStage and QualityStage Administrator.

4. Click the **Projects** tab to list the Projects.
5. Select the project `UDM`, and then click **Properties**.
6. In the Project Properties window, click **Environment**. The Environment Variables window opens.
7. Expand **General** and change the value for **LD_LIBRARY_PATH** variable to: `/usr/lib:.:/opt/IBM/InformationServer/Server/Projects/UDM/udm/lib` This is the path where the custom libraries are located.
8. Optional: Expand **Parallel** and change the value for **APT_CONFIG_FILE** variable to other than default (`/opt/IBM/InformationServer/Server/Configurations/default.apt`) with appropriate numbers of DataStage nodes that are required.
9. Click **OK**.
10. Click **Close** to save the new project and to exit the InfoSphere DataStage and QualityStage Administrator.

Updating the `operator.apt` file

An extra configuration step.

Procedure

1. Go to the `operator.apt` file from this location: `/opt/IBM/InformationServer/Server/PXEngine/etc/operator.apt`
2. Edit the `operator.apt` file to add the following lines:

```
CSVWriterOp   libCSVWriterOperator 1
FeedbackOp   libWaveOperator 1
ReceiverOp   libWaveOperator 1
WindowOp    libWindowOperator 1
PerlizeOp    libPerlizeOperator 1
CombineOp    libCombineOperator 1
AuditOp    libAuditOperator 1
HousekeeperOp libHousekeeperOperator 1
XMLChunkerOp  libXMLChunkerOperator 1
DeduplicateOp libDeduplicateOperator.so 1
```

These are the custom libraries that are specific to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.

Importing an IBM InfoSphere DataStage job

You must import the SAM LogToFile job into the project. The project and its job are created and then imported into the metadata repository by using IBM® InfoSphere™ DataStage® and QualityStage™ Designer.

Before you begin

Before you import the `ds_job_v2.2.0.0.6.dsx` that is available in the technology pack JAR file, close all the existing jobs that are open in the Designer from the previous JAR file. This is not required on a fresh installation.

Procedure

1. Log in to IBM InfoSphere DataStage and QualityStage Designer as `dsadm` and password, and select your project from the **Project** list.
2. Transfer the `ds_job_v2.2.0.0.6.dsx` file from the DataStage Server machine (`/opt/IBM/InformationServer/Server/Projects/UDM/udm/jobs`) to the designer client machine.

3. On the menu bar, click **Import** > **DataStage Components**.
4. In the DataStage Repository Import window, browse to the directory where you transferred the job files. Select `ds_job_v2.2.0.0.6.dsx` as the import file.
5. Select **Import selected** radio button and **Perform impact analysis** check box.
6. Click **OK** to import the job. You see the Import load progress window that shows the number of items that are loaded.
7. In the "DataStage Import" window, select all the items that are loaded and click **OK**.
8. Click **Jobs** > **5620sam** > **J02main5620sam** You can see the job design flow diagram in the canvas.

Configuring the DataStage job

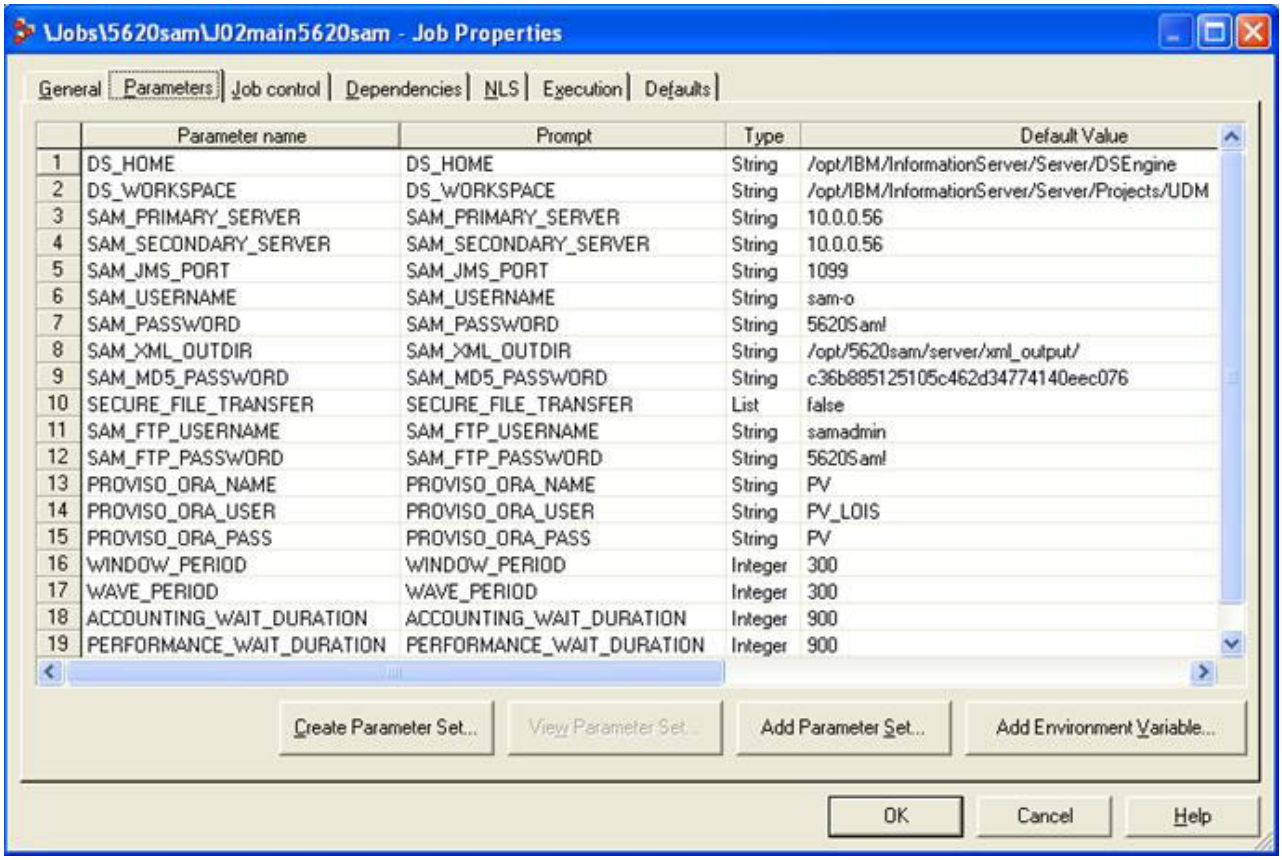
Procedure

1. In the IBM InfoSphere DataStage and QualityStage Designer, click **Routines** > **5620sam** > **checksum** from the Repository pane.
2. Optional:

   Note: This step is needed only if you created a project with a name other than UDM.
   Change the **Library path** for all routines to `/opt/IBM/InformationServer/Server/Projects/UDM/udm/lib/libroutines.so` and click **Save**. The compiled custom libraries are available in this path.
3. Repeat step 1 through step 2 for all the routines.
4. Click **Close**.
5. Click the **Job Properties** button and then click the **Parameters** tab.
6. Change the default value for the following parameters:

Option	Description
DS_HOME	`/opt/IBM/InformationServer/Server/DSEngine`
DS_WORKSPACE	`/opt/IBM/InformationServer/Server/Projects/UDM`
SAM_PRIMARY_SERVER	*<sam_primary_server>*
SAM_SECONDARY_SERVER	*<sam_secondary_server>*
SAM_USER	*<SAM_USER>*
SAM_PASSWORD	*<SAM_PASSWORD>*
SAM_FTP_USERNAME	*<SAM_FTP_USERNAME>*
SAM_FTP_PASSWORD	*<SAM_FTP_PASSWORD>*

For the remaining parameters, accept the default values.



7. Click **OK**.
8. Click **File** > **Exit** to close IBM InfoSphere DataStage and QualityStage Designer.

Configuring the CSV files in the cfg directory

The four CSV files that you must configure from the `cfg` directory where the IBM InfoSphere Information Server server is installed.

You can access the `cfg` directory from this location:
`/opt/IBM/InformationServer/Server/Projects/UDM/udm/cfg`

The files that you must configure are as follows:

`server_lookup.csv`
If you have an auxiliary server, you must enter the IP address and the user credentials to log in to the server in this file.

`filter_lookup.csv`
If you want to filter some records that are coming from the SAM server, you can write an expression for the filter criteria in this file. For more information about this file, see “Specifying what inventory and metrics to collect” on page 63.

`collector_lookup.csv`
You can specify the UBAs with their collector IDs that you have in this file. The UBAs exist in pairs of Performance and Accounting UBAs. For more information about this file, see “Specifying what inventory and metrics to collect” on page 63.

collector_mapping.csv

When you want to provision a new element and you have the load balancing criteria, you can specify the family, IP address of the element and collector ID it must be mapped to. There are 37 families and the families are as follows:

- 5620_SAM_AingrAengrQueue
- 5620_SAM_Aosqos_Policy
- 5620_SAM_BaseCard
- 5620_SAM_CardSlot
- 5620_SAM_CfmEthTest
- 5620_SAM_CfmOneWayDelay
- 5620_SAM_CfmSingleEndedLoss
- 5620_SAM_CfmTwoWayDelay
- 5620_SAM_Channel
- 5620_SAM_ControlProcessor
- 5620_SAM_DaughterCard
- 5620_SAM_DHCP6_Address
- 5620_SAM_DS1_E1
- 5620_SAM_Hw_Environment
- 5620_SAM_IMALink
- 5620_SAM_ISA_Mda
- 5620_SAM_ISA_Member
- 5620_SAM_LAGInterface
- 5620_SAM_MCMCard
- 5620_SAM_MME
- 5620_SAM_MPLS_Site
- 5620_SAM_MPLSInterface
- 5620_SAM_MSS
- 5620_SAM_NQueue
- 5620_SAM_OAM_Test
- 5620_SAM_PhysicalPort
- 5620_SAM_PPP_Interface
- 5620_SAM_PPP_Protocol
- 5620_SAM_S11Peer
- 5620_SAM_S1UPeer
- 5620_SAM_S5Peer
- 5620_SAM_S8Peer
- 5620_SAM_SdpBinding
- 5620_SAM_ServiceAccessInterface
- 5620_SAM_Shelf
- 5620_SAM_Subnet_Address
- 5620_SAM_Virtual_Router

Enabling the firewall on the IBM InfoSphere Information Server and WebSphere Application Server

Open and make the TCP ports available through firewall for InfoSphere Information Server and WebSphere Application Server.

Procedure

1. Activate the firewall on the DataStage server by using the following steps:
   a. Click **System** > **Administration** > **Security Level and Firewall**.
   b. In the Security Level Configuration window, click **Firewall** list and select **Enabled**.
   c. Click the **SELinux** tab and select **Permissive** from the **SELinux Setting** list.
2. Enable the ports for the DataStage server by using the following steps:
   a. Log in to `https://<hostname>:<port>/ibm/console`. InfoSphere Information Server web-based client opens.
   b. Click **Servers** > **Server Types** > **Websphere application servers**.
   c. Select your server name from the Application Server panel.
   d. On the Communications section, click **Ports**. A page that displays the list of ports opens.
3. Additionally, you must enable all the `was.*` ports and `dsrpc.port` port. To do this, follow these steps:
   a. Open the `response.txt` file and add the port number with this command:

      Note: The default location for `response.txt` file is: `/opt/IBM/InformationServer/Server/Projects`

      ```
      $ cat /opt/IBM/InformationServer/response.txt | grep -i port
      ```

      A list of ports are displayed in the console.
   b. Open the ports with this command:

      ```
      iptables -I INPUT -p tcp --dport <port_number> -j ACCEPT
      ```
   c. Enable the ports `was.*` ports and `dsrpc.port` port.
   d. Save the setting and restart the `iptables` with these commands:

      ```
      service iptables save

      service iptables restart
      ```
   e. List the opened ports with this command:

      ```
      iptables –L
      ```
   f. Save this setting to a file by using the following command:

      ```
      iptables-save > /root/ds_firewalls
      ```
   g. Append the following lines to `/etc/rc.local` file so that setting is restored upon restart:

      ```
      iptables-restore > /root/ds_firewalls
      ```

Note: For more information about verifying the network and opening ports, see http://publib.boulder.ibm.com/infocenter/iisinfsv/v8r7/index.jsp?topic=%2Fcom.ibm.swg.im.iis.productization.iisinfsv.install.doc%2Ftopics%2Fwsisinst_pln_networks.html

Compiling the job

You must compile the job to prepare it to run on your system on the IBM InfoSphere DataStage and QualityStage Designer.

Before you begin

Ensure that the job named `J02main5620sam` that you created is open and active in the job design area.

Procedure

1. Select **File** > **Compile**.

   Or, click the Compile ( ) button from the toolbar. The "Compile Job" window opens. As the job is compiled, the window is updated with messages from the compiler.
2. When the "Compile Job" window displays a message that the job is compiled successfully, click **OK**.

Results

The job is now compiled and ready to run. For more information about getting your jobs ready to run, see http://publib.boulder.ibm.com/infocenter/iisinfsv/v8r7/topic/com.ibm.swg.im.iis.ds.design.doc/topics/gettingjobsreadytorun.html

Running the job

You can use the Director client to run the job and to view the log that the job produces as it runs.

About this task

You run the job from the Director client. The Director client is the operating console. You also can use the Director client to monitor the jobs and troubleshoot the job by any error log that you receive when you run the job.

Procedure

1. Click **Start** > **All Programs** > **IBM InfoSphere Information Server** > **IBM InfoSphere DataStage and QualityStage Director**. The IBM InfoSphere DataStage and QualityStage Director opens. In the Director client, your job status is compiled, which means that the job is ready to run.
2. Select your job in the right pane of the Director client, and select **Job** > **Run Now**. Ensure that the job parameters are set correctly.
3. In the "Job Run Options" window, click **Limits** tab and select **No limit** in Warnings pane.
4. Optional: In the "Job Run Options" window, click the **General** tab, and then click **Record job performance data** option to enable performance data.
5. Click **Run**.
6. When the job status changes to **Running**, select **View** > **Log**.

   Or, click the **Log** ( ) button to open the job in log mode.
7. Examine the job log to see the type of information that the Director client reports as it runs a job. The messages that you see are either control or information type. Jobs can also have Fatal and Warning messages.

8. Select **File** > **Exit** to close the Director client.

What to do next

You see many warning messages at the time of a job startup. These warning messages can be ignored. These warnings are thrown by DataStage checks. But pay attention to the warnings that you might see while the job is running. These warnings are displayed to alert the user.

The job starts a daemon. This daemon is connected to SAM JMS and directs all the messages to ActiveMQ. The DataStage job reads from the ActiveMQ. To check the daemon process, follow these steps:

1. Go to `/opt/IBM/InformationServer/Server/Projects/UDM/udm/logs` directory.
2. Open the `sam-jms-daemon.log` file to see the messages that are flowing in. By default, the `KeepAlive` messages appear every 30 seconds. This time interval can be configured on the SAM server.

Attention: It is recommended to restart the DataStage job once in every few days. When the job is restarted without restarting the JMS client daemon, the full dump is not started.

Viewing the JMS message flow from SAM server in Apache ActiveMQ

You can view the results of your job execution by opening the Apache AciveMQ from the Web browser. You can see the JMS message flow from SAM server in Apache ActiveMQ.

Procedure

1. Open the Apache ActiveMQ console from the web browser:
   `http://<Server_IP_Address>:8161/admin/`

   <*Server_IP_Address*> is the server where Apache ActiveMQ is installed.
2. Click the **Queues** tab. You can see the Number Of Consumers, Messages Enqueued and Messages Dequeued. You can also perform maintenance from here.

Gracefully shutting down the job

The stages are shut down one after the other. Job continues to run until its process is complete and then shuts down. To stop a job, you must wait until the job is completed.

Procedure

1. Go to `/opt/IBM/InformationServer/Server/Projects/UDM/udm/bin` directory.
2. Run the `sendDoneMessage.sh` file by using the following command:

   ```
   cd /opt/IBM/InformationServer/Server/Projects/UDM/udm/bin
   ./sendDoneMessage.sh
   ```

   Ideally, when you stop the Job, the daemon process must be running. Check the status of the daemon by using the following command:

   ```
   ./daemon.sh status
   ```

   If for some reason the status gives the following output:

```
UDMD_STATUS=STOPPED
UDMD_REASON='daemon no longer running'
DS_DIR=${DS_DIR-/opt/IBM/InformationServer/Server/DSEngine}
SAM_JMSURL1=${SAM_JMSURL1-10.0.0.56}
SAM_JMSURL2=${SAM_JMSURL2-10.0.0.79}
DS_WORKSPACE=${DS_WORKSPACE-//opt/IBM/InformationServer/Server/Projects/UDM}
SAM_UNIQUE_ID=${SAM_UNIQUE_ID-devds_J01main5620sam}
SAM_USERNAME=${SAM_USERNAME-sam-o}
SAM_PASSWORD=${SAM_PASSWORD-5620Sam!}
```

Look at the `sam-jms-daemon.log` file from the `/opt/IBM/InformationServer/Server/Projects/UDM/udm/logs` directory. You can troubleshoot and start the daemon manually. For more information about starting the daemon, see "Starting the daemon manually"

Starting the daemon manually

At the time of job start, it checks whether the daemon process is running or not. If the daemon is not running, the job starts the daemon. You can run the daemon manually.

About this task

To run the daemon manually, follow these steps:

Procedure

1. Go to `/opt/IBM/InformationServer/Server/Projects/UDM/udm/bin` directory.
2. Start the daemon process by using the following command:

   ```
   ./daemon.sh start
   STATUS:SUCCESS
   ```
3. To check the status of the daemon, use the following command:

   ```
   ./daemon.sh status
   ```

   The following output is displayed:

   ```
   UDMD_STATUS=RUNNING
   UDMD_REASON='daemon is running'
   UDMD_PID=6505
   DS_DIR=${DS_DIR-/opt/IBM/InformationServer/Server/DSEngine}
   SAM_JMSURL1=${SAM_JMSURL1-10.0.0.56}
   SAM_JMSURL2=${SAM_JMSURL2-10.0.0.79}
   DS_WORKSPACE=${DS_WORKSPACE-//opt/IBM/InformationServer/Server/Projects/UDM}
   SAM_UNIQUE_ID=${SAM_UNIQUE_ID-devds_J01main5620sam}
   SAM_USERNAME=${SAM_USERNAME-sam-o}
   SAM_PASSWORD=${SAM_PASSWORD-5620Sam!}
   ```

Note: You can start the daemon manually only after the job is run successfully at least once.

Data flow in the data subdirectories

Access the data directory from here: /opt/IBM/InformationServer/Server/Projects/UDM/udm/data.

The data directory contains all the data files. The different subdirectories in the data directory are as follows:

in When there is a file available message from the SAM server, DataStage job fetches the XML files and places it in the in directory.

done After the DataStage job processes these XML files, it moves them into the done directory. You must clean these XML files to free the space for storage.

cache This directory contains the temporary data that is required by the job for its processing. This directory contains a set of socket files for intercommunication, map files for sharing the memory among the different stages, and litedb files are where the data is buffered and stored temporarily even when the job is shut down to avoid data loss.

out The CSV files are created in the out directory that is based on the information in the XML files and JMS messages if any.

Important: The files from the cache directory are used by the DataStage job for internal use. You must not delete or alter any file from the subdirectory while the job is running. Otherwise, the job might fail.

Configuring the DataStage job for Secure File Transfer support

About this task

To add Secure File Transfer support for DataStage job, follow these steps:

Procedure

1. In the IBM InfoSphere DataStage and QualityStage Designer, click the **Job Properties** button, and then click the **Parameters** tab.
2. Change the default value for the **SECURE_FILE_TRANSFER** to TRUE.
3. Create the SSH private key file by name sshkey_file.
4. Copy the SSH private key file to this location: /opt/IBM/InformationServer/Server/Projects/UDM/udm/cfg/sshkey_file
5. Or, link the sshkey_file to the target private key file by using the following commands as dsadm:

```
$ pwd
/opt/IBM/InformationServer/Server/Projects/UDM/udm/cfg
$ ls -l sshkey_file
lrwxrwxrwx 1 dsadm dstage 23 Nov  7 21:47 sshkey_file ->
/home/dsadm/.ssh/id_rsa
```

Chapter 6. Installing the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack

The Topology Editor was introduced at the same time as the 4.3-U technology pack release. All 4.3-U or higher UBA technology pack installations require the Topology Editor to configure the technology pack.

Configuration details are described in the *Pack Installation and Configuration Guide*. You can install the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack either from a launchpad or by using the command line.

Tivoli Netcool Performance Manager supports the 4.3-U or higher technology pack installation procedures.

All technology packs, both legacy bundle and stand-alone packs, require the Technology Pack Installer. Always use the latest Technology Pack Installer, regardless of the version of the technology pack.

Important: A new Technology Pack Installer is released in 1.3-G release with the version 3.3.1.0. This version has no feature enhancements but is released for license text changes.

All technology packs require that the Starter Kit or the Pack Bundle Prerequisite Pack to be installed.

Prerequisite software

Ensure that you fulfill these prerequisites before you install and configure the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.

Prerequisite software for Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack installation

You must have all the prerequisite software and required information before you install and configure a technology pack.

- IBM Tivoli Netcool Performance Manager 1.3.2. Additionally, you require the 1.3.2.0-TIV-TNPM-IF0019 fix pack.

  Note: This fix pack contains the DataChannel fixes to support IBM InfoSphere Information Server for Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.
- Oracle 11g client 64 bit
- UBA collectors. You can add UBA collectors as described in *Add a Collector* in *Installing Tivoli Netcool Performance Manager - Wireline Component* and associate it with a UBA pack as part of this technology pack installation.
- Ensure that you have access to the Tivoli Netcool Performance Manager DataMart server that is running an X Window System server.

  Note: If there is no graphics card on the DataMart server, the Xvfb virtual frame buffer package that provides X Window System services is automatically installed. For more information, see *Setting Up a Remote X Window Display* in *Installing Tivoli Netcool Performance Manager - Wireline Component*.

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- Ensure that you have access to the Tivoli Integrated Portal.
- Ensure that you have access to the DataChannel server.
- Ensure that you have access to the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack installation files on one of the following locations:
  - Product distribution site: https://www-112.ibm.com/software/howtobuy/softwareandservices. On the product distribution sites are the `ProvisoPackInstaller.jar` file, and technology pack JAR files.
  - Tivoli Netcool Performance Manager CD distribution, which contains the `ProvisoPackInstaller.jar` file, technology pack JAR files, and the JAR files for the Starter Kit components.
    For more information about the Starter Kit, see "Preinstallation setup tasks" on page 39.
    For more information about obtaining software, see your IBM customer representative.
- The correct version of Java. For more information, see *Configuration Recommendations*.
- Apache ActiveMQ v5.5.1 that is bundled with the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack JAR file.

Additional information

Before configuring a technology pack, ensure that you:

- Have the following documentation for your version of Tivoli Netcool Performance Manager:
  - *IBM Tivoli Netcool Performance Manager: Pack Release Notes* for the current technology pack release
  - *IBM Tivoli Netcool Performance Manager: Installation Guide*
  - *IBM Tivoli Netcool Performance Manager: Upgrade Guide* (if you are upgrading the core software)
  - *IBM Tivoli Netcool Performance Manager: Pack Upgrade Guide* (if you are upgrading the technology-pack software)
  - *IBM Tivoli Netcool Performance Manager: DataMart Configuration Guide*

    Note: Refer to this guide to create an inventory profile and initiate a discovery.
- Ensure that you have access to the following site to check for interim fixes or fix packs that might apply to your technology pack:
  http://www-306.ibm.com/software/sysmgmt/products/support/NetcoolProviso.html
- The Tivoli Netcool Performance Manager documentation and the *IBM Tivoli Netcool Performance Manager: Pack Release Notes*, which are available on the following website:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/topic/com.ibm.netcool_pm.doc/welcome_tnpm.html
- The Oracle TNS name of the server on which you installed Oracle server with the Tivoli Netcool Performance Manager database configuration. For more information, see *Specifying a Basename for DB_USER_ROOT* in the *Installing Tivoli Netcool Performance Manager - Wireline Component*.

Preinstallation setup tasks

Ensure that all necessary configuration steps are completed on the prerequisite software.

- Completed the following tasks:
  - Reviewed the release notes for the current technology pack.

    Note: Release notes contain important information that you must consider before you install a technology pack. They also contain information about specific patches that must be installed before you configure a technology pack
  - Installed the 1.3.2 version of the Tivoli Netcool Performance Manager components, as described in the *IBM Tivoli Netcool Performance Manager: Installation Guide*.
  - Configured at least one DataChannel.
  - Created a user on the server with permission to **FTP** and delete files.
- Open a terminal emulator and log on to the DataMart server as `pvuser`.
- Change your working directory to the DataMart home directory (`/opt/datamart`, by default).
- Load the shell with the DataMart environment by sourcing the `dataMart.env` file, as follows:

  ```
  . /opt/datamart/dataMart.env
  ```

  Note: After you load the DataMart environment into the shell, the `PVMHOME` variable is set to the DataMart home directory, `/opt/datamart`, by default. These instructions assume that this variable is set.
- Set and export the `DISPLAY` environment variable (see *Setting Up a Remote X Window Display* in the *Installing Tivoli Netcool Performance Manager - Wireline Component*), so that the Technology Pack Installer GUI displays back on your system.
- Installed the Technology Pack.

  Note: Localization is done automatically during installation of the technology pack.

Preparing the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack installation directory

You can obtain technology pack installation files from the IBM product distribution website, or from the Tivoli Netcool Performance Manager technology pack CD.

Before you begin

If you are installing the packs by using an instance of the Tivoli Netcool Performance Manager launchpad on the local file system, you can install directly from the CD. Otherwise, you must create a temporary directory and copy the technology pack files to the local system before you begin the installation. You cannot run the launchpad from the Tivoli Netcool Performance Manager DVD, and then install technology packs directly from the CD distribution.

Note: If you are using a local instance of the launchpad and you want to install directly from the technology pack CD, you can skip this step and proceed to Chapter 6, "Installing the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack," on page 37.

Procedure

1. On the system where DataMart is located, use the `mkdir` command to create `app-packs` directory to hold the technology pack JAR files and the `ProvisoPackInstaller.jar` file. For example:

   ```
   mkdir -p $PVMHOME/version/app-packs
   ```

2. If you want to use technology packs from the IBM product distribution website, download the JAR files by following these steps:
   a. Use the `cd` command to change your working directory to the `app-packs` directory that you created in Step 1. For example:

      ```
      cd $PVMHOME/version/app-packs
      ```

   b. Download the following from this website:
      https://www-112.ibm.com/software/howtobuy/softwareandservices
      - `ProvisoPackInstaller.jar` file
      - JAR files for technology packs you want to install (the bundled JAR file for bundled packs or individual JAR files for stand-alone packs)
3. If you want to use technology packs from the Tivoli Netcool Performance Manager technology pack CD, browse to the `/Proviso/AP/jar` location on the CD and copy the following files to the temporary directory:
   - `ProvisoPackInstaller.jar` file
   - JAR files for technology packs you want to install (the bundled JAR file for bundled packs or individual JAR files for stand-alone packs)
4. Unmount the CD.

Installing the technology pack by using the launchpad

Use this information to install a technology pack by using the launchpad.

Before you begin

Check the version of Java running on your system by entering the following command:

```
java -version
```

You must upgrade your version of Java depending on the technology pack release.

Important: For 4.3-U and higher technology packs, the launchpad requires you to enter the path to supported Java runtime binary files. Only version 1.5.0_b(14+) is supported. The Tivoli Netcool Performance Manager topology editor provides a supported version of the Java binary files. Using the older Java version might result in an error detailing that it is not possible to proceed with the installation.

About this task

To install a Tivoli Netcool Performance Manager technology pack, follow these steps:

Procedure

1. Start the installer as follows:
   a. If it is not already open, open the launchpad (see *Starting the Launchpad* in the *Installing Tivoli Netcool Performance Manager - Wireline Component*).

Note: Open a terminal emulator and log on to the DataMart server as `pvuser`. You must `su` to `root`. Otherwise, the launchpad fails to start.

b. On the launchpad, click **Install Technology Pack**.

c. On the Install Technology Pack window, enter the following information:
   - The *DataMart home* directory (for example,`/opt/datamart`, by default).
   - The *Java run time environment home* directory (for example, `/opt/IBM/proviso/topologyEditor/jre/bin`).

     Note: For information about supported JRE versions, see the *IBM Tivoli Netcool Performance Manager: Configuration Recommendations*.
   - The Tivoli Netcool Performance Manager user (for example, `pvuser`).

d. Click the **Install Technology Pack** link.
   A window prompts you to select the technology pack installation setup directory.

e. Click **Browse** to locate the temporary directory (`$PVMHOME/version/app-packs`) that you created in "Preparing the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack installation directory" on page 39, or the directory on the Tivoli Netcool Performance Manager CD where the pack JAR files are located (by default, `/Proviso/AP/jar`).
   The technology pack can be loaded to the server where the Tivoli Netcool Performance Manager database is installed.

f. Click the directory, and then click **Select** to display the specified directory in the window.

g. Click **OK**.
   When the Technology Pack Installer starts, it displays a Tivoli Netcool Performance Manager Technology Packs Welcome window.

2. Click **Next**.

3. Accept the license agreement, and then click **Next**.
   The Technology Pack Installer displays the Database Access Parameters window with the parameter values that you specified when installing and configuring Oracle, the Tivoli Netcool Performance Manager database, and Tivoli Netcool Performance Manager DataMart. For more information, see *Installing and configuring the prerequisite software* and *Installing in a distributed environment* in the *Installing Tivoli Netcool Performance Manager - Wireline Component*.

4. Reenter the password of the database user, which is `PV` by default.

5. Click **Next** to continue.
   The Technology Pack Installer displays the Tivoli Integrated Portal access parameter values that you specified when installing and configuring Tivoli Netcool Performance Manager DataView as described in *Installing in a distributed environment* in the *Installing Tivoli Netcool Performance Manager - Wireline Component*.

   Note: The Technology Pack Installer GUI always displays 16315 as the default port number for Tivoli Integrated Portal. If you want to use a different port number, you must give the port number at the time of Tivoli Netcool Performance Manager installation. Otherwise, the Technology Pack Installer displays an error message and you cannot proceed with the installation.

6. Reenter the password, which is `tipadmin` for the Tivoli Integrated Portal user.
   The Technology Pack Installer displays a Feature Selection window, which lists all the packs you downloaded to the directory created in "Preparing the

Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack installation directory" on page 39 in the left panel. All the packs are automatically selected for installation.

7. Clear any technology packs in the list that you do not want to install, and then click **Next**.

   Note: The prerequisites for technology packs item in the Feature Selection window is always installed. You cannot clear this item. The Starter Kit is not included in this item.
   Depending on the type of packs you install, you might be presented with slightly different windows.
8. Click **Next** to start the installation.
   As the stand-alone packs are installed, the Technology Pack Installer displays the name of each pack and indicates the progress. When the installation completes, the Technology Pack Install Complete window is displayed.
9. Click **Finish** to exit the Technology Pack Installer.
10. Go to What to do next section to perform post-installation tasks.

What to do next

After the installation completes, do the following tasks:

Important: A technology pack does not work until it is configured. After you configure the technology pack, data is collected and reports are populated.

- Populate the family dictionary table as described in "Populating the family dictionary table."
- Add a UBA collector as described in"Adding a UBA collector for a UBA pack" on page 43.
- Configure the technology pack as described in Chapter 7, "Configuring the technology pack," on page 45.

Populating the family dictionary table

Use this information to populate the family dictionary table for any new Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 installation.

Procedure

1. Change your working directory to the standard directory by using the following command:

   ```
   cd $PVMHOME/APFiles/alcatel_5620_sam_log2file/datamart/standard/
   ```
2. Provide the run permission to the `importLogToFileFamilyDictionary.rmg` script file by using the following command:

   ```
   chmod +x importLogToFileFamilyDictionary.rmg
   ```
3. Source the DataMart environment by using the following command:

   ```
   .$PVMHOME/dataMart.env
   ```
4. Run the `importLogToFileFamilyDictionary.rmg` script file by using the following command:

   ```
   ./importLogToFileFamilyDictionary.rmg
   ```

   Initially, you receive the `$Import has started` message. When the import is completed, you see the `$Completed import` message.

UBA collectors

The UBA collector is associated with two DataChannel components:

Complex Metric Engine (CME)x.x
Performs calculations on the collected data.

File Transfer Engine (FTE)x.x
Transfers files from the collector output directories and places them in the input directory of the CME.

Note: Topology Editor includes the channel and collector numbers in the component names. For example, Data Channel 1 can have Collector UBA 1.1, with Complex Metric Engine 1.1 and File Transfer Engine 1.1.
The FTE writes data to the file `/var/adm/wtmpx` on each system that hosts a collector. As part of routine maintenance, check the size of this file to prevent it from growing too large. For more information about Disk Quota Management, see *Installing Tivoli Netcool Performance Manager - Wireline Component*.

Note: The Solaris version can be configured with strict access default settings for secure environments. Strict FTP access settings might interfere with automatic transfers between a DataChannel subchannel and the DataLoad server. Check for FTP lockouts in `/etc/ftpd/ftpusers`, and check for strict FTP rules in `/etc/ftpd/ftpaccess`.

Follow the instructions in "Adding a UBA collector for a UBA pack."

Adding a UBA collector for a UBA pack

Use this information to add a UBA collector.

Procedure

1. Load the pack XSD file into an existing topology, as follows:
   a. If it is not already open, open the Topology Editor (see *Starting the Topology Editor* in the *Installing Tivoli Netcool Performance Manager - Wireline Component*).
   b. Open a deployed topology (a `topology.xml` file) (see *Opening an Existing Topology File* in the Installing Tivoli Netcool Performance Manager - Wireline Component).
   c. In the **Technology Pack** view, right-click the **Technology Packs** folder and select **Load Technology Pack** from the menu.
   The Load the technology pack configuration metadata window displays. There are two radio buttons: **XSD file** and **JAR file**.
   d. Click the **JAR file** radio button and select **Browse**.
   There is a known issue and a workaround for opening an XSD file from a UBA pack. For more information, see *UBA pack XSD file inside a JAR file cannot be loaded into the Topology Editor* section in *IBM Tivoli Netcool Performance Manager: Pack Release Notes*.
   e. Using the **Directory:** field, the up and down arrows, and the Folders pane on the configuration metadata window, go to the directory where the technology pack JAR files exist. For example, `$PVMHOME/APFiles` or a directory on the Tivoli Netcool Performance Manager CD
   f. Select a technology pack JAR file, and then click **OK**. The pack JAR file is displayed in the configuration metadata window.

g. Click **Finish**. The Topology Editor adds the selected stand-alone technology pack to the list of technology packs displayed in the **Technology Packs** view.

2. After you load a UBA pack XSD file, you must add a UBA collector and associate it with a UBA technology pack as follows:
   a. In the **Logical** view, right-click the **DataChannel x** folder and select from the **Add collector UBA** menu.
   The Configure Collector window opens.
   b. Select the technology pack. For example, Alcatel-Lucent 5620 SAM LogToFile from the list of technology packs, and then click **Next**.
   c. Using the list of available hosts on the Configure Collector window, select the workstation that hosts the collector. For example, `corinth`
   d. Accept the default collector number. For example, `2`.
   e. Click **Finish**.
   The Topology Editor displays the new collector under the **DataChannel x** folder in the **Logical** view.
   f. Highlight the collector to view its properties. The Topology Editor displays both the UBA collector core parameters and the UBA technology pack-specific parameters. The core parameters are configured with all UBA technology packs. Review the values for the parameters to make sure that they are valid. For information about the core parameters, see the *Properties Reference*. For information about the pack-specific parameters, see the Topology Editor Help.
   g. To add extra UBA collectors for a UBA technology pack, repeat Step 2-a through Step 2-f.
   h. Redeploy the updated topology. See *Starting the Deployer* in the *Installing Tivoli Netcool Performance Manager - Wireline Component*.
3. Configure the UBA technology packs.

Log files

The Technology Pack Installer writes log files to the `/usr/tmp` directory.

Log files in this directory contain a detailed history of the tasks the Technology Pack Installer performs as it installs technology packs. You can check this log file to help solve any issues that might occur during technology pack installation. For example, a log file might contain a message that indicates that the Technology Pack Installer GUI cannot display back on your system because the `DISPLAY` environment variable was not set. For more information, see *Setting Up a Remote X Window Display* in the *Installing Tivoli Netcool Performance Manager - Wireline Component*.

Log files for bulk technology packs are named `installer<`*`timestamp`*`>.log`, where `timestamp` is the time that the file was created in seconds since the UNIX epoch. Log files for stand-alone packs are named: `APInstall<`*`timestamp`*`>.log`.

For technology packs, log file names have the format `APInstall<`*`number`*`>.log`. For example: `APInstall1311248677586.log`.

Chapter 7. Configuring the technology pack

Configure the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology pack.

Before you begin

Ensure that you:

- Have the following software and documentation for your version of Tivoli Netcool Performance Manager:
  - *IBM Tivoli Netcool Performance Manager: Pack Release Notes* for the current technology pack release
  - *Installing Tivoli Netcool Performance Manager - Wireline Component*.
  - *IBM Tivoli Netcool Performance Manager: Pack Installation and Configuration Guide*.
  - *Configuring and Operating DataMart*

    Important: Refer to this guide to run a bulk inventory profile.
  - Access to the Tivoli Netcool Performance Manager DataMart server

    Note: Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology pack is supported on Tivoli Netcool Performance Manager 1.3.2.
  - An X Window server on the DataMart server
  - Access to the Tivoli Integrated Portal
  - Access to the DataChannel server.
- Ensure that you completed the following tasks:
  - Reviewed the release notes for the current technology pack.

    Note: Release notes contain important information that you must consider before you install a technology pack. They also contain information about specific patches that must be installed before you configure a technology pack.
  - Installed the current version of the Tivoli Netcool Performance Manager components, as described in the *Installing Tivoli Netcool Performance Manager - Wireline Component*.
  - Installed the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.
  - Configured at least one DataChannel.
  - Configured two UBA Bulk Collector subchannels.
  - Created a user on the Alcatel-Lucent 5620 SAM server with permission to FTP and delete files.
- Configured the XSD file. To configure the XSD file,
  1. Open the Topology Editor, and click **Topology** > **Open existing topology to load existing topology from database**
  2. On the Technology Packs pane, load the **Alcatel-Lucent SAM 5620 LogToFile** XSD file.
  3. In the **Logical View**, create the following collectors on any new or existing channels, and configure their corresponding parameters:
     - Performance UBA

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– Accounting UBA

4. Click **Run** > **Run Deployer for Installation** to deploy the topology that you configured.

To configure the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack, follow these steps:

Procedure

1. Load the DataMart environment. To load the shell with the DataMart environment, follow these steps:
   a. Log in to the DataMart server as `pvuser`.
   b. Create new folder `DATA_CHANNEL_HOME/scripts/alcatel_5620_sam_log2file`.
   c. Change your working directory to the DataMart home directory (`/opt/datamart`, by default), by using the following command:
      ```
      $ cd /opt/datamart
      ```
   d. Load the shell with the DataMart environment, by sourcing the `dataMart.env` file, as follows:
      ```
      $ . /opt/datamart/dataMart.env
      ```

      Note: After you load the DataMart environment into the shell, the *PVMHOME* variable is set to the DataMart home directory, `/opt/datamart` by default. These instructions assume that this variable is set.
2. Copy technology-specific files from the DataMart server to the DataChannel server. Technology-specific files are used to associate a UBA technology pack with a specific instance of the UBA.

   Note: While it is possible to install DataMart and DataChannel on the same server, in a typical installation these modules are installed on separate servers. If so, use FTP to copy the technology-specific files. Otherwise, if DataMart and DataChannel are on the same server, use the **cp** command to copy the files to the appropriate DataChannel directory.
   To copy technology-specific files to the DataChannel server, follow these steps:
   a. Log in to the Tivoli Netcool Performance Manager DataChannel server by entering the user name and password that you specified when you install and configuring a DataChannel. The default user name and password are `pvuser` and `PV`.
   b. Change your working directory to the `DATA_CHANNEL_HOME/scripts/alcatel_5620_sam_log2file` directory by entering the following command, replacing `DATA_CHANNEL_HOME` with the DataChannel home directory (`/opt/datachannel`, by default):
      ```
      $ cd DATA_CHANNEL_HOME/scripts/alcatel_5620_sam_log2file
      ```
   c. Using the FTP utility in text mode, log in to the DataMart server by using the appropriate user name and password (`pvuser` and `PV`, by default).
   d. Using the `cd` subcommand, change your working directory to the `$PVMHOME/APFiles/alcatel_5620_sam_log2file/datachannel/scripts/alcatel_5620_sam_log2file` directory.
   e. By using the **get** subcommand, copy the bulk adapter design files (*.js), scripts (if any), and other files (if any) from the DataMart server to the DataChannel server.
   f. Exit the FTP utility by entering the **bye** subcommand.
   g. Verify that the technology-specific files are now in the target directory as follows:

- Verify that the bulk adapter design files (*.js), scripts, other files (if any) are now in the `$ cd DATA_CHANNEL_HOME/scripts/alcatel_5620_sam_log2file` directory.

3. Copy the `samOss.jar` file to the IBM InfoSphere Information Server. The `samOss.jar` file is distributed on a SAM distribution DVD referred to as the 5620 SAM software DVD-ROM, and is in the following directory: `<SAM_ROOT_RELEASE_DIR>/nms/integrations/SAM_O`,
   You must copy the `samOss.jar` file from the directory on the DVD to the `/opt/IBM/InformationServer/Server/Projects/UDM/udm/jar` directory.
4. Activate data collection requests. During installation of the technology pack, all predefined data collection requests are promoted to the database and set to inactive (that is, idle displays in the Active column of the Tivoli Netcool Performance Manager DataMart Request Editor). You must activate these predefined data collections requests by using the Request Editor. To set data collection requests to active, follow these steps:
   a. Change your working directory to `$PVMHOME/bin` (`/opt/datamart/bin`, by default) on the DataMart server.
   b. Start the DataMart GUI by entering the following command and pressing Enter:
      ```
      $ pvm
      ```
   c. Click the **Configuration** tab, then click **Request Editor** to open the Request Editor.
   d. Click the **Collection** tab.
   e. Click **Refresh**. The predefined data collection requests are loaded into the Request Editor from the database.
   f. Click the **Inactive** button in the Filter group box to display only idle requests.
   g. In the Sub-Element Groups pane, select all idle data collection requests in the following group or groups: `Root->Sub-Element Collect->Alcatel-Lucent 5620 SAM`
   h. Click the **Active** box under **Details**. The Request Editor toggles the idle setting for these data collection requests from **idle** to **active** in the **Active** column.
   i. Click **Save**.
5. Load the DataChannel environment. In subsequent steps, you can run the **dccmd** commands. To ensure that you can run these commands, load the shell with the DataChannel environment by following these steps:
   a. Log in to the DataChannel server as `pvuser`.
   b. Change your working directory to the DataChannel home directory (`/opt/datachannel`, by default), by using the following command:
      ```
      $ cd /opt/datachannel
      ```
   c. Load the shell with the DataChannel environment, by sourcing the `dataChannel.env` file, as follows:
      ```
      $ . /opt/datachannel/dataChannel.env
      ```
6. Restart the DataChannel to activate the UBA and read in changes to the deployed topology.
   a. Open a terminal emulator on the DataChannel server.
   b. Use the **dccmd** command to stop all DataChannel applications:
      ```
      $ dccmd stop all
      ```
   c. Use the **dccmd** command to release all daemons that are running in the DataChannel:

```
$ dccmd forget all
```

d. Use the following command to find the process identifiers (pids) associated with the DataChannel visual processes:

```
$ findvisual
```

e. Use the following commands to stop each DataChannel visual process:

```
$ kill -9 <cnsw_pid>
$ kill -9 <logw_pid>
$ kill -9 <amgrw_pid>
$ kill -9 <cmgrw_pid>
```

f. Use the following commands to restart each DataChannel visual process:

```
$ cnsw
$ logw
$ amgrw
$ cmgrw
```

g. Use the **dccmd** command to start all DataChannel applications:

```
$ dccmd start all
```

h. Use the **dccmd** command to verify that all of the DataChannel applications started properly:

```
$ dccmd status all
```

More specifically, make sure that the UBA application associated with the DataChannel that you configured for the Alcatel-Lucent SAM 5620 LogToFile Technology Pack is running.

i. Watch the output of the status switch to verify that all the necessary processes are running. If these processes are running, run the tail utility on the log file for the UBA by issuing a command similar to the following command:

```
tail -f DATA_CHANNEL_HOME/log/proviso.log | grep UBA.<channel_number>.
<collector_number> | more
```

where:

Variable	Meaning
<*channel_number*>	Specifies the channel number.
<*collector_number*>	Specifies the collector number (for example, 100) that you specified when you configure this UBA Bulk Collector.
The trailing dash (–) after <*collector_number*>	Removes extraneous log messages from your view. That is, the trailing dash guarantees that the command displays only those messages that are generated by your application. The first set of messages relate to syntax checks.

The following table identifies some events to watch for during the syntax check:

Event	Meaning
The UBA application starts successfully, but then stops running.	Typically, this event occurs because of a licensing issue.
The bulk adapter design file might be corrupted.	This event causes a syntax error before the UBA application connects to the database.

Event	Meaning
The UBA application connects to the database.	This event causes a message similar to the following example to display: `DB_CONNECT Connecting to <sid> as <user>` If you see this database connection message without prior errors, the UBA application passed the syntax check.

7. Run the bulk inventory profile. The UBA application handles the inventory and metrics according to the instructions provided in the technology pack design file or files. The UBA application inserts the created elements, subelements, and metrics into the database. However, the UBA application does not handle the grouping of these elements and subelements. To handle the grouping of the elements and subelements that were inserted into the database, UBA technology packs supply a bulk inventory profile. This bulk inventory profile is automatically created when the pack is installed. Bulk inventory profiles use the following name syntax: `bulk_N` where:

Syntax item	Meaning
`bulk_`	Identifies as a bulk inventory profile for a UBA technology pack.
`N`	Specifies the collector number (for example, 100) that the user specified when you configure this UBA Bulk Collector.

   You must use the Inventory Tool to run a bulk inventory profile. To run the bulk inventory profiles for this technology pack, perform the following steps:

   a. In the command window where you loaded the DataMart environment, change your working directory to `$PVMHOME/bin` (`/opt/datamart/bin`, by default) on the DataMart server.

   b. Start the DataMart GUI:

      ```
      $ pvm
      ```

   c. Click **Inventory Tool** in the **Resource** tab. The Inventory Tool window appears. This window displays a list of the existing inventory profiles on the Configuration tab. The names of the inventory profiles to run are `bulk_N1` and `bulk_N2`, where *N1* and *N2* are the collector numbers that are configured for this pack.

   d. On the Configuration tab, click the bulk inventory profiles for this technology pack and then select **Run Profile** from the **Action** menu. The **Live Information** tab displays messages about the status of the profiles. For more information about running an inventory profile, see *Configuring and Operating DataMart*.

   e. Every time the UBA technology pack design file creates new elements, subelements, and metrics, you must perform the previous steps to group the elements and subelements. One way to accomplish this task regularly is to create a cron entry that uses the inventory command. The following example shows the cron entries that periodically perform the grouping operation for the bulk inventory profiles that are called `bulk_100` and `bulk_101`:

      ```
      0 * * * * . /opt/datamart/dataMart.env && inventory -name bulk_100
      -action pregrouping -reload -noX
      0 * * * * . /opt/datamart/dataMart.env && inventory -name bulk_100
      -action grouping -reload -noX
      ```

```
0 * * * * . /opt/datamart/dataMart.env && inventory -name bulk_101
-action pregrouping -reload -noX
0 * * * * . /opt/datamart/dataMart.env && inventory -name bulk_101
-action grouping -reload -noX
```

For more information about the inventory command, see *Command Line Interface Reference*.

8. Deploy reports. After the technology pack installation completes, the rules for the new device are automatically loaded into the database. The inventory process uses those rules to group elements and subelements. You must manually deploy (auto-group) the reports by associating them with groups in the NOC Reporting tree in the DataMart Resource Editor. To deploy the Alcatel-Lucent SAM 5620 LogToFile Technology Pack reports, follow these steps:
   a. Open the Tivoli Netcool Performance Manager DataMart Resource Editor.
   b. Click the **ReportSEGroup** tab.
   c. Move the cursor to the left pane and scroll up to select any group under the **SUB-ELEMENTS** > **NOC Reporting tree**.
   d. Right-click and select the **AutoGrouping** option from the menu. The **AutoGrouping** option places the reports in dynamically generated groups that are created during inventory.
   e. Click **Yes** to continue.
   f. Click **Close** to exit the message box, or click **Details** to view a description of any errors.
   g. You can also deploy reports regularly by creating a cron entry that uses the inventory CLI command and the

      ```
      -reportGrouping
      ```

      option. This option instructs the inventory command to run the report grouping rules and update the deployed reports that are stored in the database. Report grouping rules must first are created before this option can be used. For information about creating report grouping rules, see *Configuring and Operating DataMart*. The following example shows a cron entry that periodically performs the deployment report operation:

      ```
      0 * * * * . /opt/datamart/dataMart.env && inventory -noX -reportGrouping
      ```

      For more information about the inventory command, see *Command Line Interface Reference*.

Verifying resources

Use the Tivoli Netcool Performance Manager DataMart Resource Editor to determine whether the technology pack resources (elements, subelements, properties, and so on) were successfully discovered and created in the database during inventory.

For information about using the DataMart Resource Editor, see the *IBM Tivoli Netcool Performance Manager DataMart Configuration and Operation Guide*.

Configuring Secure File Transfer support in Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack

If you want to use Secure File Transfer, OpenSSH must be configured for key-based authentication when you connect from the Tivoli Netcool Performance Manager account on the client (the host that is running the Tivoli Netcool Performance Manager process that must use SFTP) to the account on the server. In addition, the host keys must be established such that the host key confirmation prompt is not displayed during the connection.

UBAs in Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack can connect to the DataStage server by using FTP alone. If you want to use SFTP support, use the steps that are described in the following technical note:http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/topic/com.ibm.netcool_proviso.doc_4.4.2/tech_notes/NetcoolProvisoTechNote-sftp.pdf

For more information about *SSH login without password*, see http://www.linuxproblem.org/art_9.html

Chapter 8. Upgrading the technology pack

Describes how to upgrade Alcatel-Lucent 5620 SAM 2.14.0.0 Technology Pack and Alcatel-Lucent 5620 SAM LogToFile 2.2.0.0 Technology Pack to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.

Upgrading the Alcatel-Lucent 5620 SAM 2.14.0.0 Technology Pack to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0

You can upgrade the Alcatel-Lucent 5620 SAM 2.14.0.0 Technology Pack to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0.

About this task

To upgrade the Alcatel-Lucent 5620 SAM 2.14.0.0 Technology Pack to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0:

Procedure

1. Stop the DataChannel:
   a. Start a terminal emulator on the DataChannel server
   b. Run the **dccmd** command to stop all the DataChannel applications:
      ```
      $ dccmd stop all
      ```
   c. Run the **dccmd** command to release all daemons that are running in the DataChannel:
      ```
      $ dccmd forget all
      ```
   d. Run the following command to find the process identifiers (pids) that are associated with the DataChannel visual processes:
      ```
      $ findvisual
      ```
   e. Run the following commands to stop each DataChannel visual process:
      ```
      $ kill -9 <cnsw_pid>
      $ kill -9 <logw_pid>
      $ kill -9 <amgrw_pid>
      $ kill -9 <cmgrw_pid>
      ```
2. Start the Topology Editor, and delete the Performance and Accounting UBAs:
   a. Open the Topology Editor, and click **Topology** > **Open existing topology to load existing topology from database**.
   b. In the Logical View, select the **UBA collector**, right click and Remove Collector channels.
   c. Repeat for the same step for all existing UBA collectors in system.
   d. Click **Topology** > **Save Topology**.
   e. Click **Run** > **Run Deployer for Uninstallation to deploy the topology that you configured**.
3. Run the following commands to remove the files:
   - `/opt/proviso/datachannel/bin`
     `rm –rf *_visual`
   - `/opt/proviso/datachannel/state`
     `rm –rf *pid`
     `rm -rf *_visual`

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- `/opt/proviso/datachannel/log`
  `rm –rf *log`

4. Create backup of the DataChannel directories and do not delete them from the original location except UBA directories.
5. Install the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack. For more information, see "Installing the technology pack by using the launchpad" on page 40.
6. Copy the core patches to`/opt/proviso/datachannel/state`.
7. Start the Topology Editor and load the technology pack from the JAR file.
8. Configure the Accounting and Performance UBAs with the same collector numbers that you deleted in step 2.
9. Set the **APP.FILE_PERIOD** parameter value same as the data file polling time. For example, if the data file polling is at the cycle of every 5 Minutes, set the value to `300`.
10. Save the topology.
11. Run the deployer to complete the installation.
12. Start the Request Editor, set to inactive, and then save.
13. Update the polling time to 5 Minutes or 15 Minutes, set to active, and then click **Save**.
14. Run the following commands to restart each DataChannel visual process:

    ```
    $ cnsw
    $ logw
    $ amgrw
    $ cmgrw
    ```

15. Run the **dccmd** command to start all the DataChannel applications: .

    ```
    $ dccmd start all
    ```

16. Compile the `uba` profiles.
17. Run the auto-grouping again after the full dump process is completed for the first time.

Upgrading the Alcatel-Lucent 5620 SAM LogToFile 2.2.0.0 Technology Pack to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0

You can upgrade Alcatel-Lucent 5620 SAM LogToFile 2.2.0.0 Technology Pack to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.

Before you begin

Before you upgrade Alcatel-Lucent 5620 SAM LogToFile 2.2.0.0 Technology Pack to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack, you must first remove the linking for timeCaptured metric and then remove the timeCaptured metric. The timeCaptured metric is available in bulk groups InterfaceAdditionStats and InterfaceStats.

To remove the linking for timeCaptured metric, follow these steps:

1. Source the `dataMart.env` file by using the following command:

   ```
   source /opt/datamart/dataMart.env
   ```

2. Start the DataMart GUI by using the following command:

   ```
   pvm &
   ```

3. Click the **Configuration** tab, and then click **Request Editor** to open the Request Editor.

4. Click the **Collection** tab.
5. From the **Formulas** pane, expand the following group:

   AP > **Specific** > **Alcatel** > **5620 SAM** > **Bulk** > **Equipment** > **InterfaceAdditionalStats** > **timeCaptured**
6. Right-click **timeCaptured**, select **Apply as filter**, and click **Refresh**. The metrics are displayed in the pane for the timeCaptured filter.
7. Right-click within the pane and click **Select All**. All the metrics are selected.
8. Right-click within the pane and click **Remove Selection**.
9. Again, from the **Formulas** pane, expand the **InterfaceStats** > **timeCaptured** group.
10. Repeat steps 6 – 8 to remove the linking for timeCaptured metric.
11. Click **Save**.
12. Click **File** > **Exit**.

After the linking is removed, you can now remove the metrics.

To remove metrics, follow these steps:

1. From the Tivoli Netcool Performance Manager DataMart GUI, click **File** > **Selectors** > **Formula Selector**.
2. From the **Formulas** pane, expand the following group:

   AP > **Specific** > **Alcatel** > **5620 SAM** > **Bulk** > **Equipment** > **InterfaceAdditionalStats**

   The metrics are displayed in the right pane.
3. Right-click the timeCaptured metric and click **Delete**. The timeCaptured metric is deleted.
4. Similarly, select **InterfaceStats** from the **Formulas** pane. The metrics are displayed in the right pane.
5. Right-click the timeCaptured metric and click **Delete**. The timeCaptured metric is deleted.
6. Click **Edit** > **Apply**.
7. Click **File** > **Close**.

Complete the upgrade procedure by following these steps:

Procedure

1. Stop the DataChannel:
   a. Start a terminal emulator on the DataChannel server.
   b. Run the **dccmd** command to stop all the DataChannel applications:

      ```
      $ dccmd stop all
      ```
   c. Run the following command to find the process identifiers (pids) that are associated with the DataChannel visual processes:

      ```
      $ findvisual
      ```
   d. Run the following commands to stop each DataChannel visual process:

      ```
      $ kill -9 <cnsw_pid>
      $ kill -9 <logw_pid>
      $ kill -9 <amgrw_pid>
      $ kill -9 <cmgrw_pid>
      ```
2. Run the following commands to remove the files:
   - `/opt/proviso/datachannel/bin`
     `rm –rf *_visual`

- /opt/proviso/datachannel/state
  rm –rf *pid
  rm -rf *_visual
- /opt/proviso/datachannel/log
  rm –rf *log

3. Create backup of the DataChannel directories and do not delete them from the original location.
4. Install the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack. For more information, see "Installing the technology pack by using the launchpad" on page 40.
5. Copy the core patches to/opt/proviso/datachannel/state.
6. Start the Topology Editor and load the technology pack from the JAR file.
7. Check the properties set in the UBA Collectors. Modify the value accordingly for the upgrade environment, if needed.
8. Save the topology.
9. Run the deployer to complete the installation.
10. Start the Request Editor, set to inactive, and then save.
11. Update the polling time to 5 Minutes or 15 Minutes, set to active, and then click **Save**.
12. Run the following commands to restart each DataChannel visual process:

    ```
    $ cnsw
    $ logw
    $ amgrw
    $ cmgrw
    ```

13. Run the **dccmd** command to start all the DataChannel applications: .

    ```
    $ dccmd start all
    ```

14. Compile the uba profiles.
15. Run the auto-grouping again after the full dump process is completed for the first time.

    Note: When you upgrade Alcatel-Lucent 5620 SAM FindToFile 2.14.0.0 Technology Pack to Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack, you do not need to remove linking and timeCaptured metrics. You must follow the upgrade steps.

Chapter 9. Setting up the Alcatel-Lucent 5620 SAM servers to support LogToFile

The SAM server administrator must set up the appropriate SAM servers environment so that the Alcatel-Lucent SAM 5620 LogToFile Technology Pack operates correctly.

About this task

Setting up the Alcatel-Lucent 5620 SAM servers includes the following tasks:

Install SAM on the primary and redundant servers

The SAM server administrator must have installed SAM on primary and redundant servers. The DataStage job accesses the SAM servers to request the inventory and metrics.

Synchronize the clocks

Use the appropriate tool to ensure that the clocks on the SAM server and the server on which the DataStage is installed are synchronized.

For example, make sure that the Coordinated Universal Time (UTC) on the server on which DataStage is operating matches the UTC time on the server on which Alcatel-Lucent 5620 SAM is operating.

Install the Alcatel-Lucent 5620 SAM Client GUI

The SAM server administrator must have installed the Alcatel-Lucent 5620 SAM Client GUI on some client computer or server.

During the installation, the SAM server administrator must configure the IP addresses of the SAM primary and redundant servers.

Configure an OSS user account

The SAM server administrator uses the Alcatel-Lucent 5620 SAM Client GUI to configure an OSS (operational support system) user account from the client computer or server.

This user account consists of a user name and password that allows the user to access the SAM primary and redundant servers. This OSS user account must not have administrative privileges. The SAM server administrator must record the user name and password for this OSS user account and keep it in a secure place.

The IBM InfoSphere Information Server needs access to this OSS account.

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Configure the SAM accounting and polling statistics

Accounting policies are relevant to the Access Interfaces and the metrics that they report. The type of accounting policy on an Access Interface determines the metrics that are reported.

When inventory is collected, Tivoli Netcool Performance Manager learns the accounting policy for each Access Interface. From these accounting policies, the Alcatel-Lucent 5620 SAM LogToFile Technology Pack can determine the accounting policy type.

The Alcatel-Lucent 5620 SAM defines and manages accounting policies, which determine how SAM accounting statistics are collected. The Alcatel-Lucent 5620 SAM LogToFile Technology Pack currently supports two types of SAM accounting statistic: access-port statistics and network-port statistics. The accounting package provides a maximum of 13 active accounting policies, one for each type of record for the eight access-port statistics types and for the five network-port statistics types.

The SAM server administrator uses the Alcatel-Lucent 5620 SAM Client GUI to configure SAM accounting statistics on the primary and redundant SAM servers.

The Alcatel-Lucent 5620 SAM LogToFile Technology Pack supports the accounting policies that are listed in the Table, depending on the type of nodes that are monitored.

Table 1. Supported accounting policies

Accounting policy	Description
`CombinedNetworkEgressOctetsLogRecord`	Manages the collection of octet activity for egress network queues.
`CombinedNetworkIngressOctetsLogRecord`	Manages the collection of octet activity for ingress network queues.
`CompleteServiceEgressPacketOctets LogRecord`	Manages the collection of packet and octet activity for egress service queues.
`CompleteServiceIngressPacketOctets LogRecord`	Manages the collection of packet and octet activity for ingress service queues.
`ServiceEgressOctetsLogRecord`	Manages the collection of octet activity for egress service queues.
`ServiceEgressPacketsLogRecord`	Manages the collection of packet activity for egress service queues.
`ServiceIngressOctetsLogRecord`	Manages the collection of octet activity for ingress service queues.
`ServiceIngressPacketsLogRecord`	Manages the collection of packet activity for ingress service queues.

Note:

The `service.ServiceEgressOctetsLogRecord` class and the `service.ServiceEgressPacketsLogRecord` class are mutually exclusive. You cannot collect metrics for both classes at the same time.

Similarly, the service.ServiceIngressOctetsLogRecord class and the service.ServiceIngressPacketsLogRecord class are mutually exclusive. You cannot collect metrics for both classes at the same time.

The SAM server administrator uses the appropriate utility to configure polling statistics for SAM statistics classes. To configure polling statistics for these SAM statistics classes, enable the appropriate MIBs on the primary and redundant SAM servers.

The default Tivoli Netcool Performance Manager collection period for all types of SAM statistics is set to every 15 minutes, so the SAM server policies must be configured to match this default value.

Note: The collection period for any type of SAM statistics must be set to the same value as the collection period for the corresponding Tivoli Netcool Performance Manager requests.

Enable the MIBs for the SAM statistics classes

SAM server administrator must enable all of the MIBs listed in the table for the Alcatel-Lucent 5620 SAM LogToFile Technology Pack.

The first column of the table identifies the SAM statistics class on which to enable polling statistics; the second column identifies the MIBs to enable for the SAM statistics classes; and the third column identifies the object types to enable. The SAM server administrator can enable more object types, but the Alcatel-Lucent 5620 SAM LogToFile Technology Pack expects at a minimum the ones that are listed in the third column.

Table 2. MIBs to enable for SAM statistics classes

SAM statistics class	MIB	Object types
equipment.AllocatedMemoryStatsLogRecord	TIMETRA-SYSTEMMIB	sgiMemoryPoolAllocated
equipment.AvailableMemoryStatsLogRecord	TIMETRA-SYSTEMMIB	sgiMemoryAvailable
equipment.InterfaceAdditionalStatsLogRecord	IF-MIB	ifXEntry
equipment.InterfaceStatsLogRecord	IF-MIB (in the file named rfc2233-IF-MIB)	ifEntry
equipment.MediaIndependentStatsLogRecord	HC-RMON-MIB	mediaIndependentEntry
equipment.SystemCpuStatsLogRecord	TIMETRA-SYSTEMMIB	sgiCpuUsage
equipment.SystemMemoryStatsLogRecord	TIMETRA-SYSTEMMIB	sgiMemoryUsed
mpls.MplsInterfaceStatsLogRecord	TIMETRA-MPLS-MIB	vRtrMplsIfStatEntry
ppp.PppStatsLogRecord and ppp.PppControlProtocol	TIMETRA-PPP-MIB	tmnxPppEntry
svt.SdpBindingBaseStatsLogRecord	TIMETRA-SERV-MIB	sdpBindBaseStatsEntry
ethernetequipment.Dot3StatsLogRecord	EtherLike-MIB	dot3StatsEntry
mpls.SiteStatsLogRecord	TIMETRA-MPLS-MIB	vRtrMplsGeneralStatEntry
service.PppoeSapStatsLogRecord	TIMETRA-PPPOEMIB	tmnxPppoeSapStatsEntry
svq.CustMultiSvcSiteIngSchedPlcyPortStatsLogRecord	TIMETRA-SERV-MIB	custMultiSvcSiteIngSchedPlcyPortStatsEntry
svq.CustMultiSvcSiteEgrSchedPlcyPortStatsLogRecord	TIMETRA-SERV-MIB	custMultiSvcSiteEgrSchedPlcyPortStatsEntry

Table 2. MIBs to enable for SAM statistics classes (continued)

SAM statistics class	MIB	Object types
aosqos.QoSIngressPolicyStatsLogRecord	ALCATEL-IND1-QOS-MIB	alaQoSRuleEntry
equipment.CardHealthStatsLogRecord	ALCATEL-IND1-HEALTH-MIB	healthModuleEntry

Setting up ping tests

The SAM server enables SAM server administrators to run ping tests to receive information about traffic latency and jitter.

The results from the tests can include SAM statistics such as round-trip time, one-way trip time, jitter. These test results can be collected as metrics against OAM Test object subelements representing the tests.

Note: This section describes one method of creating OAM (ping) tests. This method uses the Alcatel-Lucent 5620 SAM Client GUI to set up the OAM test to run periodically by using the scheduler on the SAM server. To run the OAM test on the SAM server, you must set the `NE schedulable` setting to off. This is only one method for running OAM tests and is provided for users who have no knowledge about how to run OAM tests. In other methods for running OAM tests, the `NE schedulable` setting can be set to on. In any method that is employed to run the OAM tests, the period of the tests must be set to the same value as the period for the metric requests. The default value is 15 minutes.

A SAM server administrator can create ping tests in two ways:

Alcatel-Lucent 5620 SAM Client GUI
The Alcatel-Lucent 5620 SAM Client GUI allows a SAM server administrator to set up a ping test, specifying the period of the test, the type of test, and so on.

OSS requests
The SAM server administrator might also establish OSS requests that creates ping tests on the SAM server.

Although the two methods are available, the Alcatel-Lucent SAM 5620 LogToFile Technology Pack expects that a SAM server administrator manually set up ping tests by using the Alcatel-Lucent 5620 SAM Client GUI. For more information about setting up these ping tests, see the *Alcatel-Lucent 5620 Service Aware Manager Release 7.0 User Guide*.

To collect ping-related SAM statistics that are meaningful within Tivoli Netcool Performance Manager, multiple consecutive data points must be collected for any particular OAM Test object subelement. Thus, it is recommended that ping tests be set up to run on a schedule that lasts for a significant duration (minimum three hours).

This section summarizes the steps to follow. For more information, see the *Alcatel-Lucent 5620 Service Aware Manager Release 7.0 User Guide*.

- Create a test suite. Make sure the **NE Schedulable** option is selected and Test Result Storage is set to **Both Database and File**
- Create one or more ping tests. The Alcatel-Lucent 5620 SAM LogToFile Technology Pack supports several types of ping tests. Remember to select the

NE Schedulable option and set the Test Result Storage to **Both Database and File**. Make sure the tests run without errors.

- Add the ping tests to the test suite.
- Create a schedule to run the test suite. Set the schedule to run at the same frequency as the Tivoli Netcool Performance Manager collection requests for jitter and latency. For example, if Tivoli Netcool Performance Manager collection requests occur every 15 minutes, then set the schedule to run the ping test suite every 15 minutes.

  Note: Ensure that you set the frequency to a value that is consistent with the other collection periods.
- Apply the schedule to the test suite and run the tests that are contained in the suite. Each time a test completes, Tivoli Netcool Performance Manager collects a set of metrics.

SAM server administrators can run several types of ping tests to measure traffic characteristics at different levels of the network stack. Each ping test is represented by its own SAM class and associated ping result class. For more information about these classes, see the *Alcatel-Lucent 5620 SAM XML Reference - Release 7.0* documentation.

Chapter 10. Modifying the collection strategy

Describes how to modify the amount of data that is managed by the Alcatel-Lucent 5620 SAM LogToFile Technology Pack. You can modify by changing the types of data that are collected, or by changing the collection period for the SAM statistics, or both.

Specifying what inventory and metrics to collect

The types of inventory and metrics that must be collected from SAM server is specified in the configuration files. These configuration files are found on the DataStage server. The configuration files specify which inventory class and metrics classes must be requested from the SAM server. The SAM server then creates the necessary files that are received by DataStage.

About this task

There are three different configuration items:

Filter Drops the records.

Partition
Enables multiple UBAs.

Window
Handles different periods. For example, 5, 15.

Filter:
The name of the filter file is `filter_lookup.csv`, and has the configuration level as `User`. **No match** for this file is not available.

Fields	Steps to get the information
Class name	Name of the SAM Class. For metric classes, use <class name>LogRecord names.
Expression	Set it as '1' (TRUE) if no filter is needed.

The **Expression** field accepts full blown Perl expressions with special variables enclosed with '{}' to refer to attributes within the class. There is a special '{DEFAULT}' to refer to the partition key attribute of the class.

For example, `equipment.PhysicalPort,{DEFAULT} eq "1.1.1.1"`
This expression means that the DataStage filter allows only the `equipment.PhysicalPort` class objects that have "1.1.1.1" value for its siteId.

`equipment.PhysicalPort,{cardSlotId} != 2`
This expression means that the DataStage filter allows only the `equipment.PhysicalPort` class objects other than the card slot id of 2.

`equipment.PhysicalPort,{DEFAULT} eq "1.1.1.1" && {cardSlotId} != 2` logical operator is supported.

`equipment.PhysicalPort,{DEFAULT} =~ /^1.1/` Regular expression is supported. It allows site key that starts with "1.1".equipment.PhysicalPort,0

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It is the simple way to filter out all records of class `equipment.PhysicalPort`.

Configuring multiple UBA collectors instances

Partitioning

The UBA partitioning involves two configuration files:

1. `collector_lookup.csv`
2. `collector_mapping.csv`

`collector_lookup.csv`

The name of the filter file is `collector_lookup.csv`, and has the configuration level as `User`. **No match** for this file is not available. This file is used to specify the number of UBAs that are available in the environment, and the type of each UBA. For details, see "Specifying what inventory and metrics to collect" on page 63. Following is an example for the `collector_lookup.csv` format:

- 100, Performance
- 101, Accounting

Fields	Steps to get the information.
Collector id	Id for the collector that is based on the UBA configuration.
Class category	Performance or Accounting.

Note: You must update this configuration.

`collector_mapping.csv`

The name of the filter file is `collector_mapping.csv`, and has the configuration level as `User`. **No match** for this file is not available. Following is an example for the `collector_mapping.csv` format:

- 5620_SAM_Channel,10.1.241.76,100
- 5620_SAM_Shelf,38.120.242.185,100

Fields	Steps to get the information.

Class Family	Possible family classes are as follows: • 5620_SAM_AingrAengrQueue • 5620_SAM_Aosqos_Policy • 5620_SAM_BaseCard • 5620_SAM_CardSlot • 5620_SAM_CfmEthTest • 5620_SAM_CfmOneWayDelay • 5620_SAM_CfmTwoWayDelay • 5620_SAM_CfmSingleEndedLoss • 5620_SAM_Channel • 5620_SAM_ControlProcessor • 5620_SAM_DaughterCard • 5620_SAM_DHCP6_Address • 5620_SAM_DS1_E1 • 5620_SAM_Hw_Environment • 5620_SAM_IMALink • 5620_SAM_ISA_Mda • 5620_SAM_ISA_Member • 5620_SAM_LAGInterface • 5620_SAM_MCMCard • 5620_SAM_MME • 5620_SAM_MPLSInterface • 5620_SAM_MPLS_Site • 5620_SAM_MSS • 5620_SAM_NQueue • 5620_SAM_OAM_Test • 5620_SAM_PhysicalPort • 5620_SAM_PPP_Interface • 5620_SAM_PPP_Protocol • 5620_SAM_S11Peer • 5620_SAM_S1UPeer • 5620_SAM_S5Peer • 5620_SAM_S8Peer • 5620_SAM_SdpBinding • 5620_SAM_ServiceAccessInterface • 5620_SAM_Shelf • 5620_SAM_Subnet_Address • 5620_SAM_Virtual_Router
Key value	The value for key. The key is from the relation lookup configuration. Most of these keys are based on the IP address. The objectFullName can also be used as a key.
Collector id	Id for collector that is based on the UBA destination.

Note: This configuration is intended for new elements from SAM that the user wants to overwrite the default hash key rule. For example, a user can force the element to go to a specific collector or UBA for better load

balance. However, this configuration does not overwrite mapping that the Job gathers from Proviso. Therefore, following is the partition rule: Mapping from Priviso DB → collector_mapping.csv → Job key hash.

Changing the collection period for SAM statistics

This section provides general guidelines on how to change the collection period for SAM statistics:

- "General guidelines on changing the collection period for SAM statistics"

General guidelines on changing the collection period for SAM statistics

The default collection period for all SAM statistics is 15 minutes. If you change the collection period, ensure that you follow these guidelines:

1. You must set the **APP.FILE_PERIOD** parameter on each UBA component and the **WINDOW_PERIOD** parameter on the IBM InfoSphere Information Server to equivalent values.

   For example, if you set the **APP.FILE_PERIOD** parameter to 300 (that is, 300 seconds, or 5 minutes), then you must set the **WINDOW_PERIOD** parameter to 300.

   Note: The **APP.FILE_PERIOD** parameter is specified in seconds, and the **WINDOW_PERIOD** parameter is specified as a series of values that are expressed in minutes.
2. The collection period for any type of SAM statistics must be set to the same value as the collection period for the corresponding Tivoli Netcool Performance Manager requests.

DataStage settings

You can configure the SAM classes for 5 minutes, 15 minutes, or in mix periods. This configuration is done at the SAM Server. However, you must specify this period information in the Job parameter to enable Job, which produces the CSV file at the correct period interval.

In the mix periods, you can configure some Alcatel-Lucent SAM 5620 classes at 15 minutes, and the remaining classes at 5 minutes. You can use the mix period to increase the collection frequency for some classes that you want, while you can keep the other classes at the default collection period, which is 15 minutes. As a result, the

- Processing load on the DataStage and UBA is reduced
- Resource usage efficiency of the underlying machine is improved

DataStage receives and processes the metric XML files both at 5 minutes and 15 minutes at the respective frequency. However, the output CSV files are generated after every 15 minutes. These CSV files contain one datapoint for the classes that are at 15-minutes period, and 3 datapoints for the classes that are at 5-minutes period. The UBA can receive the CSV files, and process the single and three datapoints accordingly.

Restriction: This configuration is useful when you want a higher collection frequency to obtain detailed reporting. However, you will experience an additional latency of 5 minutes because the data is collected for 15 minutes, and then it is passed to the UBA. If you want to achieve minimum latency at higher collection

frequency, then you must increase the collection period for all the metrics classes. However, you must ensure that you have adequate machine resource.

WINDOW_PERIOD is measured in seconds. The values are 900 (default) and 300 for 15-Minutes and 5-Minutes periods respectively. However, on special mix period, you must set the value at 900 (15 Minutes)
WAVE_PERIOD is an internal window sliding period that is measured in seconds. This value must be non-zero integer, and a denominator value for **WINDOW_PERIOD**. The default value is 300 for 5 Minutes. The default value is recommended for most of the scenarios. Therefore, you change the default value only when you have a strong reason.

ACCOUNTING_WAIT_DURATION or **PERFORMANCE_WAIT_DURATION** is the amount of time to wait for complete records for a period before writing to the CSV file. The **ACCOUNTING_WAIT_DURATION** parameter is used for the accounting classes and the **PERFORMANCE_WAIT_DURATION** parameter is used for the performance classes. However, both the parameters function the same way. This value must be divisible by **WAVE_PERIOD**. The default value is 300 for 5 Minutes.

For example, if **ACCOUNTING_WAIT_DURATION** and **WAVE_PERIOD** is 300, then the job will buffer records for one sliding window period (**ACCOUNTING_WAIT_DURATION** and **WAVE_PERIOD**), while the **WINDOW_PERIOD** is 900

Scenario 1

01:31 Received 100 accounting records with timestamp of 01:01 (Rounded down to its window period: 01:00)

01:32 Received 200 accounting records with timestamp of 01:01 (Rounded down to its window period: 01:00)

01:40 **WAVE_PERIOD** is triggered.

01:42 Received 200 accounting records with timestamp of 01:17 (Rounded down to its window period: 01:15)

01:45 **WAVE_PERIOD** is triggered. There are no new records for the 01:00 period because the wait period is 1 sliding window. The records for the 01:00 period will be written to the CSV file.

Scenario 2

01:31 Received 100 accounting records with timestamp of 01:01 (Rounded down to its window period: 01:00)

01:32 Received 200 accounting records with timestamp of 01:01 (Rounded down to its window period: 01:00)

01:40 **WAVE_PERIOD** is triggered.

01:42 Received 200 accounting records with timestamp of 01:17 (Rounded down to its window period: 01:15)

01:45 **WAVE_PERIOD** is triggered. There are no new records for the 01:00 period. The records for the 01:00 period will not be written to the CSV file.

01:46 Received 200 accounting records with timestamp of 01:19 (Rounded down to its window period: 01:15)

01:50 **WAVE_PERIOD** is triggered. There are no new records for the 01:00 period because the wait period is 1 sliding window. The records for the 01:00 period will be written to the CSV file.

Tivoli Netcool Performance Manager 1.3.2 settings

The Alcatel-Lucent 5620 SAM LogToFile Technology Pack supplies these parameters that are based on the Tivoli Netcool Performance Manager platforms.

These parameters are supplied in the pack XSD file. You specify values for these parameters as part of adding a UBA Bulk Collector and associating it with the Alcatel-Lucent SAM 5620 LogToFile Technology Pack. For more information, see the section on adding a UBA Bulk Collector in the *IBM Tivoli Netcool Performance Manager: Installation Guide*.

List of classes that are enabled or disabled

List of classes that are enabled or disabled in the DataStage `requestxml_lookup.csv` file. The `requestxml_lookup.csv` file is in `/opt/IBM/InformationServer/Server/Projects/UDM/udm/cfg` directory. Some classes are disabled. However, you can enable a disabled class.

Classes that are enabled

- aengr.ForwardingClass
- aengr.Policy
- aengr.Queue
- aingr.ForwardingClass
- aingr.Policy
- aingr.Queue
- aosqos.Policy
- aosqos.QoSIngressPolicyStatsLogRecord
- dhcp.Dhcp6AddressPrefix
- dhcp.LocalDhcp6ServerPrefixStats
- dhcp.LocalDhcpServerSubnetStats
- dhcp.Subnet
- epipe.Epipe
- equipment.AllocatedMemoryStatsLogRecord
- equipment.AvailableMemoryStatsLogRecord
- equipment.BaseCard
- equipment.CardHealthStatsLogRecord
- equipment.CardSlot
- equipment.ControlProcessor
- equipment.DaughterCard
- equipment.HardwareTemperature
- equipment.HwEnvironment (metrics)
- equipment.HwEnvironment
- equipment.InterfaceAdditionalStatsLogRecord
- equipment.InterfaceStatsLogRecord
- equipment.MCMCard
- equipment.MediaIndependentStatsLogRecord
- equipment.PhysicalPort
- equipment.Shelf

- equipment.SystemCpuMonStats
- equipment.SystemCpuStatsLogRecord
- equipment.SystemMemoryStatsLogRecord
- ethernetequipment.AggrMaintRxStats
- ethernetequipment.AggrMaintTxStats
- ethernetequipment.Dot3StatsLogRecord
- ethernetoam.CfmEthTest
- ethernetoam.CfmLoopback
- ethernetoam.CfmOneWayDelayTest
- ethernetoam.CfmTwoWayDelayTest
- ethernetoam.Mep
- icmp.IcmpPing
- ies.L3AccessInterface
- ies.ServiceAccessPoint
- ipipe.L2AccessInterface
- lag.Interface
- lte.S11AgwPeerStats
- lte.S11Peer
- lte.S1uAgwPeerStats
- lte.S1uPeer
- lte.S5AgwPeerStats
- lte.S5Peer
- lte.S8AgwPeerStats
- lte.S8Peer
- ltegw.S11FailureCodeStats
- ltegw.S5AgwFailureCodeStats
- ltegw.S8AgwFailureCodeState
- ltemme.MAFConnection
- ltemme.MmeServiceMemberMaf
- mpls.Interface
- mpls.LspPing
- mpls.MplsInterfaceStatsLogRecord
- mpls.Site
- mpls.SiteStatsLogRecord
- mpr.IMALink
- mpr.IMALinkCurrentStats
- nat.IsaMda
- nat.IsaMember
- nat.IsaMemberUsageStats
- nqueue.Entry
- nqueue.ForwardingClass
- nqueue.Policy
- ppp.Interface
- ppp.PppControlProtocol
- ppp.PppControlProtocol (metrics)

- radioequipment.PdhFrameHopHistoryDataStats15Min
- radioequipment.PdhFrameLinkHistoryDataStats15Min
- radioequipment.RadioAnalogueMeasure
- rtr.RouteStatsLogRecord
- rtr.VirtualRouter
- sasqos.AccessIngress
- sasqos.Meter
- sasqos.PortAccessEgress
- sasqos.PortAccessEgressQueue
- service.CombinedNetworkEgressOctetsLogRecord
- service.CombinedNetworkIngressOctetsLogRecord
- service.CompleteServiceEgressPacketOctetsLogRecord
- service.CompleteServiceIngressPacketOctetsLogRecord
- service.PppoeSapStatsLogRecord
- sonetequipment.Sts12Channel
- sonetequipment.Sts1Channel
- sonetequipment.Sts48Channel
- svq.AggregationScheduler
- svt.MeshSdpBinding
- svt.MirrorSdpBinding
- svt.SdpBindingBaseStatsLogRecord
- svt.SpokeSdpBinding
- svt.TunnelPing
- svt.VccvPing
- vll.L2AccessInterface
- vpls.L2AccessInterface
- vpls.Vpls
- vprn.ServiceAccessPoint
- ethernetoam.CfmLoopbackResult
- ethernetoam.CfmTwoWayDelayTestResult
- ethernetoam.CfmSingleEndedLossTest
- icmp.IcmpPingResult
- svt.TunnelPingResult
- svt.VccvPingResult
- tdmequipment.DS1E1PortSpecifics
- tdmequipment.DS1HistoryStats15minIn
- tdmequipment.DS1HistoryStats15minOut
- tdmequipment.E1HistoryStats15minIn
- tdmequipment.E1HistoryStats15minOut
- service.SitePing
- svq.CustMultiSvcSiteEgrSchedPlcyPortStatsLogRecord
- svq.CustMultiSvcSiteIngSchedPlcyPortStatsLogRecord

Classes that are disabled

- equipment.DigitalDiagnosticMonitoring
- ethernetoam.CfmEthTestResult
- ethernetoam.CfmOneWayDelayTestResult
- ethernetoam.CfmSingleEndedLossTestResult
- mirror.L2AccessInterface
- ppp.PppStats
- sasqos.AccessIngressForwardingClass
- sasqos.PortAccessEgressForwardingClass
- service.NetworkEgressPackets
- service.NetworkIngressPackets
- service.ServiceEgressOctets
- service.ServiceEgressPackets
- service.ServiceIngressOctets
- service.ServiceIngressPackets
- service.SitePingResult
- sonetequipment.Sts192Channel
- sonetequipment.Sts3Channel
- sonetequipment.TributaryChannel
- sonetequipment.TributaryGroup
- sonetequipment.Tu3Channel
- sonetequipment.Tug3Group
- tdmequipment.DS0ChannelGroup
- tdmequipment.DS1E1Channel
- tdmequipment.DS3E3Channel
- vprn.L3AccessInterface

Disabling or enabling a class

How to enable or disable a class.

About this task

The `requestxml_lookup.csv` is comma-separated file with the following fields:

1. Request type
2. Request (in the XML format)

Procedure

To disable a class:

- Add a dot before the Request type. Notice that a dot is added before `findToFile` in the following example:

```
.findToFile,<?xml version="1.0" encoding="UTF-8"?>...
<fullClassName>equipment.DigitalDiagnosticMonitoring</fullClassName>...
</SOAP:Envelope> .registerLogToFile,
<?xml version="1.0" encoding="UTF-8"?>...
<fullClassName >service.NetworkEgressPackets</fullClassName>...
</SOAP:Envelope>
```

To enable a class:

- Remove the dot that is available before Request type. Notice that the dot that was added before `findToFile` is removed in the following example:

```
findToFile,<?xml version="1.0" encoding="UTF-8"?>...
<fullClassName>equipment.DigitalDiagnosticMonitoring</fullClassName>...
</SOAP:Envelope> .registerLogToFile,
<?xml version="1.0" encoding="UTF-8"?>...
<fullClassName >service.NetworkEgressPackets</fullClassName>...
</SOAP:Envelope>
```

Chapter 11. Troubleshooting Alcatel-Lucent 5620 SAM LogToFile Technology Pack

Troubleshooting tips for issues related to Alcatel-Lucent 5620 SAM LogToFile Technology Pack and its related components.

Specifying parameter values

Several of the tips to tell you to make sure that the correct values were specified for parameters in the deployed topology.

You specify the values for these parameters depending on the Tivoli Netcool Performance Manager platform.

Tivoli Netcool Performance Manager 1.3.2

These parameters are supplied in the pack XSD file. You used the Topology Editor to specify a value for these parameters as part of adding a UBA Bulk Collector and associating it with the Alcatel-Lucent 5620 SAM Technology Pack. For more information, see *Adding a UBA Bulk Collector* in the *IBM Tivoli Netcool Performance Manager: Installation Guide*.

Inventory issues

If you do not see the expected inventory in your Tivoli Netcool Performance Manager instance, use this information. Complete the steps in each subsection, to verify that you have configured your instance correctly.

Metric data collection issues

If you do not see the expected metrics in your Tivoli Netcool Performance Manager instance, use this information. Complete the steps in each subsection, to verify that you have configured your instance correctly.

The following sections provide an overview of metric data, and describe troubleshooting tips for issues related to the metric data collection:

Overview of metric data

The SAM server supports the following types of metric data:

Polled

Polled metric data is collected by the SAM server from the routers using SNMP. To collect this data, MIBs must be enabled on the SAM server, and polling periods must be set. For more information about the MIBs that are needed, see "Enable the MIBs for the SAM statistics classes" on page 59.

Exception to the Rule: The exception is the `HwEnvironmentTemperature` files. These files are in effect inventory files in which the temperature properties are read in as metrics. For a variety of reasons related to this data not being real metrics, the temperature data is only available for a subelement under the following conditions:

- The CPU utilization metric for that subelement is available.

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- The data being processed is “current”: the UBA has caught up to the wall-clock time as much as is possible, and no backlog of data is being processed.

Accounting

Accounting metric data is collected by the routers into files. These files are retrieved by the SAM server, and read into its database. To get this data, the accounting and file policies must be configured on the SAM server and distributed to the routers. Accounting data is the data collected for services. For more information about accounting data, see “Configure the SAM accounting and polling statistics” on page 58.

Availability data

The availability data is collected from the SAM Server and is converted into CSV datafile records. This CSV datafile records are then picked by the UBAs.

The Alcatel-Lucent 5620 SAM LogToFile Technology Pack uses the following syntax for metric-data file names:
proviso<*type of Class*>_<*date*>_<*time*>_<*collector number*>.csv
type of Class = Performance, Accounting
date = yyyy.mm.dd
time = Hour.Minutes.Seconds
Collector = 100, 101

Note: 100 and 101 are the default values. However, you can change this value.

Here is an example file name for a metric-data file:
provisoPerformance_2013.02.25-01.00.00_100.csv
provisoAccounting_2013.02.25-01.05.00_101.csv

SAM metrics do not display in the Alcatel-Lucent 5620 SAM Client GUI

The SAM server administrator uses the Alcatel-Lucent 5620 SAM Client GUI to display metrics for the different objects (for example, services and network elements) in a SAM network environment.

If SAM metrics do not display in the Alcatel-Lucent 5620 SAM Client GUI, complete the following troubleshooting steps:

1. Enable the appropriate MIBs for the polled data.
2. Enable an accounting policy for the service data.

SAM metric files are empty or do not exist in the SAM server

Typically, SAM metric files are transferred to a directory, such as `/opt/5620sam/nms/server/xml_output`, on the SAM server.

If the SAM metric files are empty (that is, the XML file has left and right angle brackets with no data, and is 60 bytes or less), complete the following troubleshooting steps:

1. Determine whether the absence of data is because there are no inventory elements and subelements from which to receive metrics.
2. Ensure that you enabled the appropriate MIBs for polled data.
3. Ensure that you enabled an accounting policy for service data.
4. Ensure that you have set your filter parameters correctly. For more information about filter parameters, see “Specifying what inventory and metrics to collect” on page 63.

If SAM metric files do not exist in the SAM server, complete the following troubleshooting steps:

1. Make sure that an OSS user account is configured. For more information, see "Configure an OSS user account" on page 57.
2. Make sure that the correct values were specified for the SAM.USERNAME and SAM.PASSWORD parameters, as described in "Specifying parameter values" on page 73, based on the Tivoli Netcool Performance Manager platform:

Platform	Parameter
Tivoli Netcool Performance Manager 1.3.2	ALCATEL_5620_SAM.SAM.USERNAME ALCATEL_5620_SAM.SAM.PASSWORD

3. Make sure that the correct value was specified for the SAM.SAM_VERSION parameter, as described in "Specifying parameter values" on page 73 based on the Tivoli Netcool Performance Manager platform:

Platform	Parameter
Tivoli Netcool Performance Manager 1.3.2	ALCATEL_5620_SAM.SAM.SAM_VERSION

   The SAM.SAM_VERSION parameter refers to the JMS protocol version, not the SAM server version.
4. Make sure that the correct values were specified for the SAM.SOAP_URI and SAM.SOAP_URI_2 parameters, as described in "Specifying parameter values" on page 73, based on the Tivoli Netcool Performance Manager platform:

Platform	Parameter
Tivoli Netcool Performance Manager 1.3.2	ALCATEL_5620_SAM.SAM.SOAP_URI ALCATEL_5620_SAM.SAM.SOAP_URI_2

5. Check the UNIX file permissions. Ensure that the permissions on the xml_output directory are set to allow read, write, and run by the SAM FTP user.
6. Ensure that you have enough disk space. For more information, see "Metrics collection fails due to lack of disk space" on page 76.

BOF files do not exist in the FTE output directory

Typically, the DataChannel File Transfer Engine (FTE) application transfers BOFs (Binary Object Files) to the DataChannel FTE application output directory.

If the BOF files are not transferred to the FTE application output directory, complete the following troubleshooting steps:

1. Make sure that an FTP user account is configured on the primary and redundant SAM servers.
2. Make sure that the user exists on the SAM server and that the correct FTP user name and password values were specified for the SAM.EXPORT_URI and SAM.EXPORT_URI_2 parameters, as described in "Specifying parameter values" on page 73, based on the Tivoli Netcool Performance Manager platform:

Platform	Parameter
Tivoli Netcool Performance Manager 1.3.2	ALCATEL_5620_SAM.SAM.EXPORT_URI ALCATEL_5620_SAM.SAM.EXPORT_URI_2

3. Check the UNIX permissions.

4. Ensure that you have enough disk space. For more information, see "Metrics collection fails due to lack of disk space"

BOF files do not exist in the CME output directory

Typically, the DataChannel File Transfer Engine (FTE) application transfers BOFs (Binary Object Files) to the DataChannel Complex Metric Engine (CME) application output directory.

If the BOF files are not transferred to the CME application output directory, complete the following troubleshooting steps:

1. Make sure that you imported the Alcatel-Lucent 5620 SAM LogToFile Technology Pack predefined collection requests.
2. Check the UNIX permissions.
3. Ensure that you have enough disk space. For more information, see "Metrics collection fails due to lack of disk space."

Metrics collection fails due to lack of disk space

If the metric-collection operation fails on the SAM server, make sure that you have enough disk space on the computer or server on which Tivoli Netcool Performance Manager is installed.

The amount of space that is required depends on the following points:

- Size of the SAM network
- Values that are set for the following retention parameters in the `dc.cfg` file:

Platform	Parameter
Tivoli Netcool Performance Manager 1.3.2	`FC_RETENTION_HOURS`

It is possible, in a SAM networking environment, that several gigabytes worth of data files can be collected and transferred to the UBA application done directory each day. These data files accumulate according to the values specified for the retention parameters. Therefore, it is possible to use the maximum disk space before the retention period expires and the DataChannel deletes the data files from the `done` directory.

You must monitor the size of the data files that are transferred to the `done` directory during metric collection, and determine whether adjustments must be made to the retention parameters.

General Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack issue

This is a general issue for Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.

Data for Near End Unavailable (per second) metric is not calculated correctly

Symptoms

If you run the Error Management Near-End report on Dashboard Application Services Hub, data for **Near End Unavailable (per second)** metric is not calculated correctly.

To run this report, browse to the following path on Dashboard Application Services Hub: **NOC Reporting** > **Alcatel-Lucent 5620 SAM** > **SAM Router Health** > **9500**

MPR > IMA Link > Error Management Near-End.

General Alcatel-Lucent 5620 SAM LogToFile 2.2.0.0 Technology Pack issues

These are the general issues for Alcatel-Lucent 5620 SAM LogToFile 2.2.0.0 Technology Pack.

Data for the Inbound Errors might not be displayed

Symptoms

If you run the Packet Health for LAG interface Group report on the Tivoli Integrated Portal, data for the **Inbound Errors** might not be displayed. To run the Packet Health for LAG interface Group report, browse to the following path on the Tivoli Integrated Portal: **NOC Reporting** > **Alcatel-Lucent 5620 SAM** > **SAM Router Health** > **Link Aggregation Groups (LAG Interfaces)**. On this report, in the table, the data for the **Inbound Errors** might not be displayed.

SAM server generates the XML file that contains more than one datapoint

Symptoms

In the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 technology pack, the SAM server generates the XML file that contains more than one datapoint for the same resource. For example, at the SAM server, if you configure the OAM classes for 5 minutes, the OAM XML file is generated after every five minutes. However, this XML file contains more than one datapoint for the same resource. As a result, the CSV file that is received by the UBA also contains more than one datapoint. Only the first datapoint is processed properly while the remaining two datapoints are ignored.

The description property is not updated in the Resource Editor

Symptoms

In the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 technology pack, on the SAM server, you modify the **`Description`** property for SAP, SAP Queue, and Network Queue. The JMS update event is triggered, and the modifications are reflected in the CSV files that are produced by DataStage. However, these modifications in the **`Description`** property are not reflected in the Resource Editor after the UBA processes the CSV files.

SQL error occurs during the Fulldump process

Symptoms

After you install the Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology pack for the first time, you configure multiple UBA collectors. For example, you set collectors that are numbered 100 and 102 for the Performance metrics, and collectors that are numbered 101 and 103 for the Accounting metrics. When both the Performance or Accounting collectors process the Fulldump file at the same time, SQL error occurs.

Resolving the problem

To avoid this problem, you must not start more than one Performance or Accounting collector during the resource provisioning. You must start one Performance and one Accounting collector, and wait until the corresponding Fulldump files are processed. You can then start the remaining Performance and

Accounting collectors.

The subelement time changes on several unexpected occasions

In the Resource Editor, the subelement date must change when:

- A subelement is added, updated, or deleted.
- JMS event is triggered.

However, in the Alcatel-Lucent 5620 SAM LogToFile Technology Pack, the subelement date also changes when:

- A full dump file is processed by the UBA even if a subelement is not inserted, updated, or deleted.
- Performance or Accounting CSV file is created by DataStage.
- Alcatel-Lucent 5620 SAM is upgraded to Alcatel-Lucent 5620 SAM LogToFile.

Subelement state is not updated to OFF when you change the SAP Ingress or Egress Policy

Symptoms

When you change the Ingress and Egress Policy for the existing SAPs, the new SAP Queues associated with the new Policy are created correctly in Resource Editor with State = ON. However, the old SAP Queues associated with the old Policy remain as state = ON, and they are not updated to state = OFF.

Synchronize the time on the IBM InfoSphere Information server and the SAM server

Symptoms

Typically, there is a time difference on the IBM InfoSphere Information server and the SAM server. This may result in incorrect timestamps on the generated reports.

Causes

Time at the IBM InfoSphere Information server and the SAM server is not synchronized.

Resolving the problem

To resolve this issue, set the SAM server time to be same as the IBM InfoSphere Information server even if both servers are at different timezone. To verify whether both servers are synchronized, run the **date +%s** command, and make sure that the value that is returned for both servers is same.

Data is not displayed properly in the Volume and Utilization report

Symptoms

You browse to the following path on the Tivoli Integrated Portal to run the Volume and Utilization report: **NOC Reporting** > **Alcatel-Lucent 5620 SAM** > **SAM Router Health** > **Link Aggregation Groups (LAG Interfaces)** > **Volume & Utilization Group Summary**. The report is displayed on the right. In the **Inbound Utilization** and **Outbound Utilization** fields, **--**, **0**, and **No Data Available**, are displayed in the following tables:

- **Group Summary**
- **Resource Summary**
- **Detail Chart**

Partitioning must be done at the element level

Symptoms

DataStage collector mapping configuration provides fine level of partitioning at the subelement level. However, some subelements must be configured to the same collector. Because this rule is not verified by the DataStage job, mistakes might be introduced in the relation lookup configuration file.

Resolving the problem

To avoid this problem, you must create the partition at the element level only. You must configure all family names for an element to a single set of collectors.

The CSV file name changes when you map another class that does not correspond to its collector

Symptoms

On DataStage, the CSV file in the `out` directory is not correctly named. For example, the `provisoAccounting_2013.02.18-08.05.00_101.csv` file is incorrectly named as `provisoPerformance_2013.02.18-08.05.00_101.csv`.

Causes

This problem occurs when you map one more class that does not correspond to its collector in the `collector_mapping.csv` file. For example, in the `collector_lookup.csv` file, you set the 101 collector as Accounting. However, in the `collector_mapping.csv` file, instead of the Accounting class, you map one or more Performance classes to the 101 collector. As a result, the Accounting 101 collector gets mixed with the Performance classes, and you find the `provisoPerformance_2013.02.18-08.05.00_101.csv` file instead of `provisoAccounting_2013.02.18-08.05.00_101.csv` file in the `out` directory.

The OAM data exists at the SAM server but is not transferred to DataStage

Symptoms

The OAM data exists at the SAM server in the `xml_ouput` directory. However, this data is not transferred to DataStage at `DS/done`.

Diagnosing the problem

To identify the cause of the problem, follow these steps:

1. Run this command to verify if the `registerSasLogToFile` requests are sent to the SAM server:

   ```
   $ grep -q "^registerSasLogToFile" ./data/responsexmls.csv && echo "yes, there is a response for
   the request!"
   ```

2. Run this command to identify if an exception has occurred:

   ```
   $ grep "^registerSasLogToFile"  ./data/responsexmls.csv | grep -i "exception"
   $
   # None - all ok
   ```

3. Check if the `logFileAvailable` message is received from the SAM JMS for these `sasLogToFile`:

   ```
   $ grep "/oam/" ./logs/sam-jms-daemon.log
   $
   # None - No message is received.
   ```

   Note: `/oam/` is the parent directory for these classes.

4. Check if there is a problem with the register sasLogToFile:

```
$ grep "^registerSasLogToFile"  ./data/responsexmls.csv | perl -e
'while (<>){m/<fullClassName >(.*)<\/fullClassName>/; print $1."\n"}' |
sort | uniq ethernetoam.CfmLoopbackResult
ethernetoam.CfmTwoWayDelayTestResult
icmp.IcmpPingResult
mpls.LspPingResult
svt.TunnelPingResult
svt.VccvPingResult

$ grep "^registerSasLogToFile"  ./data/responsexmls.csv | wc -l
222
# Unexpected logs of registerSasLogToFile - you must expect up to 6 lines,
which means 6 classes.You notice 222 lines that is not correct.
```

Note: You can view logs after you run the command as explained in Step 1.

5. Check the number of times SasLogToFile is unregistered and registered:

   ```
   $ grep registerSasLog  ./data/responsexmls.csv | cut -d, -f1
   ```

6. Check times when the SasLogToFile is unregistered and registered:

   ```
   $ grep deregisterSasLogToFile  ./data/responsexmls.csv | perl -e
   'while (<>){m/responseTime>(.*)<\/responseTime>/; print $1."\n"}'
   ```

   You can see the following output:

   ```
   Feb 22, 2013 11:30:56 AM Feb 22, 2013 11:32:33 AM Feb 22, 2013 11:37:33 AM
   Feb 22, 2013 11:42:33 AM Feb 22, 2013 11:47:33 AM Feb 22, 2013 11:52:33 AM
   Feb 22, 2013 11:57:33 AM Feb 22, 2013 12:02:33 PM Feb 22, 2013 12:07:33 PM
   Feb 22, 2013 12:12:33 PM Feb 22, 2013 12:17:33 PM Feb 22, 2013 12:22:33 PM
   Feb 22, 2013 12:27:33 PM Feb 22, 2013 12:32:33 PM Feb 22, 2013 12:37:33 PM
   Feb 22, 2013 12:42:33 PM Feb 22, 2013 12:47:33 PM Feb 22, 2013 12:52:33 PM
   Feb 22, 2013 12:57:33 PM Feb 22, 2013 1:02:33 PM Feb 22, 2013 1:07:33 PM
   Feb 22, 2013 1:12:33 PM Feb 22, 2013 1:17:33 PM Feb 22, 2013 1:22:33 PM
   Feb 22, 2013 1:27:33 PM Feb 22, 2013 1:32:33 PM Feb 22, 2013 1:37:33 PM
   Feb 22, 2013 1:42:33 PM Feb 22, 2013 1:47:33 PM Feb 22, 2013 1:52:33 PM
   Feb 22, 2013 1:57:33 PM Feb 22, 2013 2:02:33 PM Feb 22, 2013 2:07:33 PM
   ```

   Note: The register cycle happens every 5 minutes, which is same as the window period.

7. Verify whether the keepalive event is sent by SAM:

   ```
   $ grep KeepAliveEvent ./logs/sam-jms-daemon.log | grep -v "Connected to JMS"
   ```

   # no keepalive events. This indicates that SAM does not send the keepAlive message but the Monitor stage, which expects keepalive message per period is falsely indicated that the daemon is not functioning properly, and restarts the daemon in cycle.

Resolving the problem

To turn off the keepAlive check, follow the steps in "How to turn off the keepAlive message flag" on page 81

General IBM InfoSphere Information Server related issues

These are the general issues for IBM InfoSphere Information Server that is required for Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack.

Troubleshooting IBM InfoSphere Information Server installations

You can resolve all installation problems, with this information.

For all troubleshooting problems with installation, see http://publib.boulder.ibm.com/infocenter/iisinfsv/v8r7/topic/com.ibm.swg.im.iis.productization.iisinfsv.install.doc/topics/wsisinst_ts_is_container.html. You can find more troubleshooting information in the information centers and customer support technical notes for various product modules and components.

DataStage job stops running because of insufficient buffer size

Symptoms

When the buffer size is insufficient, you might encounter a unrecoverable error and the job stops running. You receive the following error:

```
The record is too big to fit in a block; the length requested is: 131952, the max block
length is: 131072
```

Causes

You receive this error if the record length exceeds the block size.

Resolving the problem

To resolve this issue, increase the **APT_DEFAULT_TRANSFER_BLOCK_SIZE** accommodate the size. For more information about how to increase the size of this parameter, see http://www-01.ibm.com/support/docview.wss?uid=swg21386618.

How to turn off the `keepAlive` message flag

By default, the `keepAlive` message flag is turned on. You can manually turn off this flag.

Symptoms

When you do not see the `keepAlive` messages that are coming in, the daemon process might get restarted. To avoid that, you can turn off the `keepAlive` message flag.

Resolving the problem

To turn off the `keepAlive` message flag, follow these steps:

1. In the IBM InfoSphere DataStage and QualityStage Designer. Double-click the **Job**. The job opens in canvas.
2. Stop the Job.
3. Right-click the **Monitor_Stage** and select **Properties**.
4. In the Monitor_Stage -JTransformerPX stage window, click the **Properties** tab.
5. Update the parameter **sam_keepalive_max_missed** from 1 to 0.
6. Click **OK**.
7. Compile and restart the Job.

Verifying that the ports are enabled for all the components required for Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack

Enabling the ports for all the components that are required for Alcatel-Lucent 5620 SAM LogToFile 2.3.0.0 Technology Pack. This is applicable for Apache ActiveMQ also.

Symptoms

If you cannot access the IBM InfoSphere Information Server server or client components, verify that the component ports are enabled. To check the status of the ports, use the following command:

```
iptables -L
```

Resolving the problem

For more information about enabling the ports, see "Enabling the firewall on the IBM InfoSphere Information Server and WebSphere Application Server" on page 31.

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